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Personal Computer GAMES

Dear Reader,

Welcome to the first issue of *Personal Computer Games* – Britain's newest magazine for microcomputer games enthusiasts

There has been such a surge of interest in computer games recently that the problem facing most people is not so much finding enough games, as deciding how to choose among the thousands of packages available

That's where *Personal Computer Games* can really help you

If you want to know what a game actually looks like on the screen before you buy it, take a look at our exclusive Action Freeze! section. It will show you in full colour precisely what you will see when you run the program

The display is only the beginning of the story. Look a little further on in the magazine, and you will find page after page of games reviews

They tell you honestly just what you will – and will not – get for your money

And for the most up-to-date news on what is available and where to get it, turn to the listings in Screen Scroll

Of course, we have not forgotten the all-important hardware. We have scoured the shops for the zappiest peripherals around.

We even take a 'no holds barred' look at two of the most recent home computers: the Oric-1 and the Lynx

As if that was not enough, we are offering you the chance to win a free home computer package

We'll be featuring the winning entry in our next issue. And who knows, you might end up like 17-year old Richard Jones, whom we interview in this issue

Whatever your age and interest, or the size of your pocket, you're sure to find *Personal Computer Games* packed with fascinating and really useful information

Good reading!



Editor

FREE COMPETITION! WIN A NEW GCL MICRO

SUMMER 1983 85p.

Personal Computer GAMES

FULL PROGRAM LISTINGS FOR SIX POPULAR MICROS

REVIEWS ON 22 EXCITING GAMES

GET MORE OUT OF YOUR MICRO WITH OUR GUIDE TO ADD-ONS

ACTION FREEZE! FULL-COLOUR STILLS FROM SIX POPULAR GAMES



THE MAGAZINE THAT GIVES YOU THE TOP GAMES FOR YOUR MICRO-INCLUDING DRAGON, SPECTRUM, ZX81, ATARI, ORIC, BBC, COMMODORE, APPLE.

WHAT'S G A

NEWS

The latest information on games just released – and those still being planned Dragonalia comes to your screen and Sing-a-Long-a Micro pages 2 3

COMPETITION



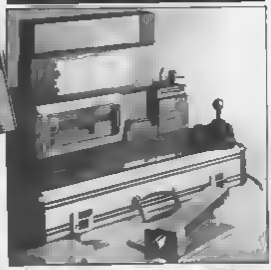
Let your imagination run riot and win a computer that has been specially designed for games enthusiasts page 17

THE LIFE GAME



How Richard Jones challenged the competitive market of computer games, and launched three successful companies by the time he was 17 page 8

BOOSTERS



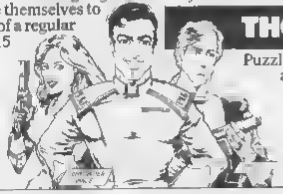
It is often difficult to find the right peripherals to boost your micro's powers and your fun Our special review tracks down the suppliers for you page 18

ADVENTURE

The Program Control Guardians protect the world from rogue games They introduce themselves to you in the first of a regular series page 15

THOUGHTS

Puzzles for high medium and not-so low IQs From Mensa, the high IQ society page 27

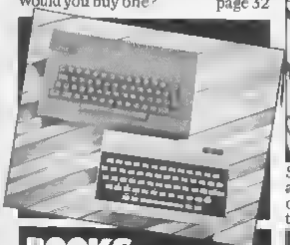


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INSIDE MES

HARDWARE

The newest British micros include a strong rival to the Spectrum and a very upgradable home computer Would you buy one? page 32



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If you are trapped in the micro maze you need a good guide We review some books that can give you an open sesame page 47

HUMOUR



Commodore karate poltergeists and health Kipper Williams sketches the trials of games addicts and goes over the top page 48

ACTION FREEZE!



Six popular games have been timed and frozen in mid-action We take off the trimmings to show you what they are really like page 50

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A selection of program listings that will bring you hours of fun, pleasure and frustration page 67

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Try before you buy We did And we tell you what we think page 93

Editor Deirdre Boyd
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Printed by Chase Web Offset, Cornwall © 1983 VNU *Personal Computer Games*

Announcing more exciting programs for the BBC.

Acornsoft is the software division of Acorn Computers, the company that designed and built the BBC Microcomputer. Here are four more exciting programs, all designed to get the most from your BBC Micro.

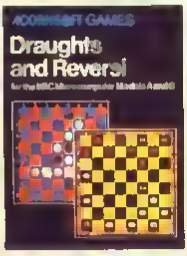
Magic Garden (£9.95) is a cassette based on Shirley Conran's successful book. It's a problem-solving program which provides the complete beginner with instant answers to the questions of what to plant and where. Simply tell the computer whether you prefer a shrub or a flower, the type of soil, light and shade conditions and required flowering time and the computer will come up with a selection of possible plants.

Draughts & Reversi (£9.95) is a cassette containing two traditional board games for you to play against the computer. Both give a graphic display of the board on the screen and you can enter your moves with either keyboard or joystick. The games can be played at varying levels of difficulty and on the higher levels you will find the computer to be a very worthy adversary.

Hopper (£9.95) is a game on cassette which can be played with either keyboard or joysticks. Hop the frog across the busy motorway trying to avoid four lanes of fast-moving traffic. To get across the river to the frog's lair you must leap on to the logs and turtles' backs, but beware of the diving turtles, the crocodile and the snake.

BCPL (£99.65) is a flexible modern structured language that's very easy to learn. The package consists of a BCPL language ROM, a 40/80 disc and a 450 page User Guide. The disc contains the BCPL Computer, a Screen Editor and a 6502 Assembler. BCPL is particularly good at handling Input and Output and is ideal for writing utility programs and to develop games and commercial packages.









How to get Acornsoft programs.

If you're a credit card holder and would like to buy the programs shown in this advertisement, or if you would like to know the address of your nearest stockist, just phone 01-200 0200.

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ACORNSOFT

Place	Weeks on Chart	Game	Publisher
1	13	**Zaxxon**	Datasoft
2	2	**Miner 2049er**	Big Five
3	38	**Frogger**	Sierra On-Line
4	38	**Deadline**	Infocom
5	37	**Zork II**	Infocom
6	28	**Zork III**	Infocom
7	38	**Temple of Apshai**	Epyx
8	38	**Zork I**	Infocom
9	39	**Choplifter**	Broderbund
10	9	**Suspended**	Infocom
11	34	**Snooper Troops #1**	Spinnaker
12	40	**Wizardry**	Sir Tech
13	34	**Apple Panic**	Broderbund
14	34	**Snooper Troops #2**	Spinnaker
15	25	**Castle Wolfenstein**	Muse
16	22	**Miner 2049er**	Micra Lab
17	24	**Ulysses & the Golden Fleece**	Sierra On Line
18	11	**AE**	Broderbund
19	2	**Dig Dug**	Atar
20	29	**Starcross**	Infocom
21	25	**Flight Simulator**	Sublogic
22	6	**B-1 Nuclear Bomber**	Avalon Hill
23	25	**Flight Simulator**	Microsoft
24	31	**Pinball**	Sublogic
25	4	**Shamus. Case II**	Synapse
26	10	**Jump Man**	Epyx
27	37	**Sargon II**	Hayden
28	1	**Donkey Kong**	Atari
29	15	**Fort Apocalypse**	Synapse
30	38	**Preppie**	Adventure International
31	13	**Sea Dragon**	Adventure International
32	11	**Necromancer**	Synapse
33	1	**Repton**	Sirius
34	38	**Shamus**	Synapse
35	31	**Crossfire**	Sierra On-Line
36	30	**Aztec**	Datamast
37	1	**Frogger**	Comsoft
38	28	**Serpentine**	Broderbund
39	8	**Pharaoh's Curse**	Synapse
40	6	**Spy's Demise**	Penguin
41	14	**Gorf**	Roklon
42	39	**Knight of Diamonds**	Sir Tech
43	2	**Final Orbit**	Sirius
44	1	**VC**	Avalon Hill
45	20	**Way Out**	Sirius
46	20	**Wizard of War**	Raklan
47	30	**Mask of the Sun**	Ultrasoft
48	28	**Centipede**	Atari
49	36	**Canyon Climber**	Datasoft
50	37	**Ali Baba & the Forty Thieves**	Quality

Chart courtesy of Softsel International.

THE WORLD'S TOP GAMES

The chart above shows Softsel's hot list of games as at the middle of June It is compiled from sales to over 4,000 retail outlets in 50 states and 30 countries

Softsel is the world's largest wholesale distributor of personal computer software It supplies more than 3,000 product lines to over 4,000 outlets worldwide European operations are centred at Feltham, near Heathrow airport.

Software for Apple, Atari, IBM, Commodore, Tandy, Texas Instruments, and CP/M micros is available from Softsel through such suppliers as Thorn EMI, Micro Soft Sierra On-line, Broderbund, Micropro, IUS, Automated Simulation, Infocom, Sirius and Spinnaker

In June, major multiple computer retailer Spectrum signed Softsel as its sole source for US software The announcement gave Softsel over 350 outlets only two months after its UK launch in April

JUST ARRIVED

English Software is proving to be one of the most prolific independent producers of software for the Atari

In June, it announced no less than 11 new cassette games for the Atari 400/800 The programs included Airstrike, Venus Voyager 2, Timewarp, Escape from Perilous, Xenon Raid, Firefleet, Diamonds, Krazy Kopter and Caverunner

All sell for £14 95 including VAT

August will see four more games Hyperblast, Captain Sticky's Treasure, Airstrike 2, and Jet Boot Jack These are on cartridge and sell at the dearer price of £29 95

English Software says it plans to release at least one new game program every month 'We're always on the look out for new programmers,' it avers

English Software can be contacted at 50 Newton Street Piccadilly Manchester M1 2EA Tel (061) 236 7259

Softek launched six new games at the beginning of June Four are for the Spectrum, one is for the Oric and one is for the Dragon

Amongst the new Spectrum games is Joust, written by 15 year old Andrew Gleister

Firebirds is a shoot-up vertical game while Megapede provides a very high-quality version of the Centipede arcade game

The Spectrum games cost £5 95, the others cost slightly more

PSST — IS THIS THE ULTIMATE?

Recently established Ultimate Play the Game sees itself as 'the most experienced arcade video game design team in Britain'

Its members were some of the first people to produce arcade games for the US and Japan

'We were unhappy working for someone else,' said director Timothy Stamper, 'so we decided to set up our own company'

The turnover is high, and is all reinvested in the company

Ultimate's aim is to produce a range of entirely original arcade-quality home computer software Its first offering, Jet Pac, was released in May

Suitable for 16K or 48K Spectrums, Jet Pac is comprised of 16 waves of aliens, with four spaceships to assemble, each of which is divided into three sections

True to its arcade origins, the program includes a player/game selection page which allows you to choose one- or two-player games, and a keyboard or Kempston joystick select This selection appears after each game is played

Ultimate's latest offering, PSST, was released in June The packaging shows Robbie the Robot sitting on a flower and defending it from what look like tiny Weetabix with wings and eyes

Robbie's job is to defend the flower from interstellar space slugs, scuttling leeches and menacing midges It is also designed to work with the 16K or 48K RAM Spectrum

Ultimate is releasing two more games for the 16K Spectrum at the end of July Tranzam is a high speed pursuit race across the US

The map is real and the playing area 600 times bigger than the actual viewing size of the screen

Cookie is a game where Charlie the Chef and his ingredients fight off the Bin Monster and other nasties Stamper describes it as 'incredible

All these retail at £5 50 including VAT They will be available at all larger branches of WH Smith, John Menzies, Boots, and other major software retailers

The games can also be obtained through mail order from Ultimate Play the Game, The Green, Ashby-de-la-Zouch, Leics LE6 5JU Tel 0530-411485

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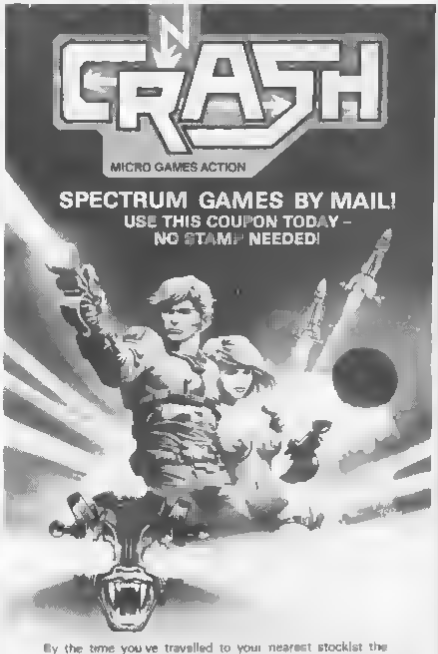
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SINCLAIR POP

Who would have thought that Clive Sinclair could affect the pop music world? Chris Sievey and Pete Shelley are two musicians who have turned to his micros

Mancunian Chris Sievey is the man behind the world's first computer-game pop single. The record was released in May by EMI and the cassette in June. It features a song called 'Camouflage' on the A-side, and three programs for the ZX81 on the B side.

When you play the B-side, all you hear is a series of bleeps. When you play it into a ZX81, the program will load into the computer's memory.

Once loaded, you can play the A side. The lyrics to 'Camouflage' and various graphics will be displayed on your TV in sync with the song.

An arcade type video game called Flying Train is also on the B-side, in both 1K and 16K versions.

With 750,000 ZX81s sold in Britain, EMI have obviously realised that the people who 10 years ago provided the biggest market for pop records are now buying computers and computer games.

'Camouflage' sells for about one fifth of the price of games cassettes. EMI hopes that Sievey's effort will 'revolutionise the music and home computer industries'.

Pete Shelley's XL1 Plus Dub Mix album is for the Spectrum. Working in one of the top computerised recording studios in this country gave him the idea of writing a program on one of his albums.

When the music for XL1 had been recorded, Shelley and a friend worked out a program for the 48K Spectrum. They put it on the last track of the album. This is loaded in a similar fashion to Sievey's record.

The album is also sold with a cassette.

'People are very scared that the music may be copied,' said a spokesman from distributor Island. 'We are not suggesting that.

'We are suggesting that they actually buy the cassette.'

The cassette was released at the end of June. It sells at approximately £5, the price varying regionally.

'We did it because the artist wanted to do it,' replied Island's spokesman when asked about future plans for more albums.

'But we would not be against doing it in the future.'

COMING — THE SCREEN PLAY OF THE BOOK

The feudal planet of Pern, its fire-breathing dragons, dragon riders and lord holders have been immortalised in the 10 million books sold to hungry Anne McCaffrey fans.

Now the Nebula award-winner has given games manufacturer Epyx the licence to market a computer game based on her characters.

McCaffrey was in the lucky position of being able to pick and choose who should market the game.

Epyx was chosen because of 'its good track record and good distribution,' she said.

'I was approached by three or four companies, and my research indicated that it was the better one.'

More importantly, McCaffrey wanted a company that would remain true to the spirit of her books.

Her younger son, Todd, is in the US helping to design the game.

'He also helped to design the Mayfair board game,' said McCaffrey.

'He has an Atari and my older son has an Apple.

'The dragon riders and lord holders are in the game, but not all of the subsidiary characters,' she continued. 'It is still at the planning stage.'

The game will run on machines from Apple, Atari, Commodore, IBM and Tandy. It will be available in the US from November, but UK fans will have to wait until 1984.

FOLLOWING A NEW CULT

Newcomers to the software market now include Virgin, the multi million pound music business.

Virgin is launching eight games initially. They are for the Spectrum, BBC and Vic 20 and retail at £7.95. The company promises a new approach to marketing games software, and high quality in the games themselves.

Like the rock industry 10 years ago, the computer games market now is young, huge and lucrative. Virgin is pushing its program authors as cult figures. Each cassette comes with a description of its author and a passport-style mugshot.

Sheepwalk is Virgin's offering from Gregory Trezise, an 18 year old, A-level student. It is one of the best games around for the Spectrum. In it you are a dog whose brief is to round up sheep without drowning them or destroying crops. It should be a big success.

Other Spectrum games are Yomp and Starfire, involving the now flogged-to-death themes of crossing a busy road and last-human-against the aliens respectively.

Our review copies had a few bugs, we hope that Virgin have managed to squash them before public release.

With each game bought before 1st September, Virgin has two freebies. The first is one year's membership of the Virgin Games Gang.

The other is music by Steve Hillage on the second side of all cassettes.


INTERCEPT
MICRO'S



INVESTMENT PACKAGE

AT 17, RICHARD JONES HAS LAUNCHED THREE SUCCESSFUL COMPANIES. REPORTER ROY DASKER ASKED HIM WHY HE CHOSE THE COMPETITIVE COMPUTER GAMES MARKET

Richard Paul Jones is a 17-year-old whizz kid. He is sole proprietor of two successful computer related companies which are building up solid profits and a solid reputation. They are expanding week by week. Then he will look for something new – another interest. He wants to make money. Paradoxically (depending on how much of a capitalist you are), he seems to be doing it with ethics.

I met him at Commodore's annual computer show in London's Cunard Hotel, where his exhibition stand was arguably the most eye-catching. Brightly coloured and fast-moving screens were generously dotted about, tempting passersby from 10 years old and up to play.

There was the old favourite, Frogger, with diving turtles and plenty of vehicles to run you down. There was Crazy Kong – the ape has captured Mario the carpenter's girlfriend and has taken her to the top of a steel fortress. You must get Mario to the top to save her!" Both of these were written by 15 year-olds. There was Jupiter Defender, amazingly written by an 11-year-old, Scramble and Panic.

The bunches of people around each machine were testimony to the popularity of the games. How did it all start?

Richard Paul Jones was born on 28th July 1965 in Rinteln, West Germany. His birth sign – Leo, the leader – was a good indication of the career he was to carve.

He was educated in West Germany and Hong Kong where his father's work brought him. He then spent nine months in Northern Ireland where he studied for, and got, seven O Levels. Four A Levels were offered, but he refused them, finishing school at 15.

'My father stayed in Northern Ireland just so I could finish my exams,' Jones said. 'We returned to England at the end of June, as soon as I finished my last one.'

He then worked part-time in a hi fi and video shop. He had the chance to get into the marketing side but had to turn it down by law – he could not work until the end of July because he was not yet 16.

'My parents were looking for something to set me up,' Jones explained. 'I was motivated and they knew it. I did not want to work in my mother's haulage company. If I had stayed in the hi-fi shop, I would probably still be there, maybe repairing equipment.'

His father had put some money aside. Jones used it to start up a video cassette library. He had 100 tapes.

In December 1981 he moved into a shop. 'Now I have 2,500 tapes and two people working for me.'

All the takings were invested back into the company and this is still going on. Everything earned goes back in to buy programs and pay staff.'

Jones launched the now-famous Llamasoft software company when he was 16, from the takings generated by the video cassette shop. It was a whirlwind affair.

'I decided to form a partnership with programmer Jeff Minter,' he said. 'I funded it and Jeff was to program the games.

'The way I met Jeff is that I bought – or rather, I ordered and built – a ZX81. I built mine before Jeff did, he started with a ZX80. He was good at writing programs. I was interested in games. I was a freak at that stage.

'I saw Jeff's potential. We were hobbyists. Then we bought a Vic 20 each. He really started shining – he was very much into it. We went to an exhibition, looked at magazines. And I could see the potential in his games compared to those.

'He was a bit dubious about coming in with me at first. But our partnership must have worked out. Jeff's got a thriving business now.'

Jones made the decision three weeks before Commodore's show last year which made this year's show Llamasoft's first anniversary. He managed to get a cancelled exhibition stand on the second day, and so Llamasoft was thrust into an eager market.

'We had a stock of 80 cassettes to take to the show and sold most. The show alone cost £600. But 10 days later we had an order for £3,500 worth of games – about 600 games. Jones said. 'I had put about £1,000 into selling the whole lot. We thought we were on to a really good thing.'

The duo bought their first piece of equipment for £1,100. They made what Jones called a 'reasonable profit'. This again went back into the company. Things continued in this fashion from June to September 1982. Then unexpected troubles began.

Jones had been doing all the marketing and administration. But his 50% share in the company meant that Minter had to be consulted on every one of his decisions. For an individualist like Jones it felt like a frustrating straightjacket.

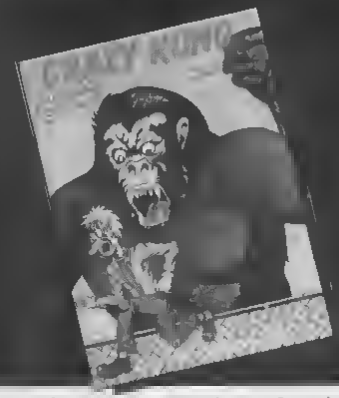
He had been placing advertisements for programmers. They came in with some extremely good demonstration tapes which he wanted to market. But Minter refused to deal with them, wishing to remain Llamasoft's sole programmer.

The split was inevitable. 'We were incompatible.' Jones said. 'He thinks I am a capitalist. That was September of last year.

Jones remains loyal to Minter's skills. 'Jeff has quality. He is a fantastic programmer. He is a classic example,' he praised. 'I don't feel that way. I just feel I am giving value for money. Certainly the quality of my games has gone up and up and up. People think the software is as good as Jeff's, but not better. The advantage is in the packaging and marketing.'

The split was followed by two months of research as Jones investigated how to set up the company he wanted. 'This involved going back to the stuff I was sent when with Llamasoft and contacting other people, too.

'EVERYONE GETS PAID WHAT THE PROGRAM IS WORTH. I HAVE NEVER RIPPED ANYONE OFF.'



Some stuff was good, some not Obviously I have my own authors now he said

Not one to be inactive, the two months of research were also spent independently developing a joystick for the Spectrum

He named the new company Interceptor Micro's in December 1982 'I placed my first ad a full page I spent £500 on that ad I made a profit 1 placed more ads Now I place spot-colour ads in four monthlies And I will use full colour later on'

The professional attitude to marketing seems strange from someone still at an age when most are at school 'I younger than me'

As with all his previous enterprises, Jones invested any money made from Interceptor Micro's back into the company 'In November I had only two games Now I own the rights to 21 or 22 programs – world marketing rights Six programmers are working from home Some are students the youngest is 11 My best selling game Jupiter Defender is written by him The oldest programmer is in his 30s He is a police officer He bought an Atari for his leisure, created a game and sold it to me

'I look at the games, see their potential I work out what each is worth on



do not see myself as a minor Jones argued 'I don't think like a 17 year old'

Had he encountered any legal problems in being under 18? 'No,' he replied 'I am trading as *Richard Paul Jones Trading As Interceptor Micro's*. I simply opened a bank account, placed my first ad, and that was it

'VAT is my first hurdle I must register for that. When I set up the video library I did register for VAT The government doesn't care that I am a minor It is just glad to get the money

'I have a legal contract for all purchases of copyrights I am well covered Anyway most of the programmers are

the retail market. I do not discriminate about age – everyone gets paid what the program is worth I have never ripped anyone off

'This has paid As you can see from the tapes, some programmers have given me four games They have enquired elsewhere but they do not get any more They may get promises but nothing comes of it So they come back

'I do not enjoy programming – that's hard work,' Jones continued 'But I do enjoy this I enjoy talking to the programmers and saying what I want

'I may want a version of Panic which is already in the arcades The programmers rough an idea. I smooth the edges, so to speak and come up with a marketable product If I felt it was not value for money I would not market it

'I have only recently put my own name on the covers of the games, under the programmer's name Usually, I star the programmer Most other people show their company, and do not advertise who wrote the game Programmers appreciate recognition when they write a program

'I have a secretary called Carol She is 18 At the bottom of all our ads, I have inserted "Any problems, ring Richard or Carol" So Carol gets some recognition, too And her name is at the bottom of the letterheads as being the secretary

'I think I am probably one of the only companies in England selling stuff and not making the profit everyone else is making This is because I am spending so much money on packaging – not so much advertising but the actual packaging "Why are you packaging like EMI Video?" people ask me Even the type of case I use – instead of using ordinary cassette cases, I went for a special video cassette package which is costing three times as much But I am charging less than most'

A quick look at Interceptor Micro's programs shows the truth of Jones' last remark Six of the games for the Commodore 64 are £5, the remaining seven £7 And games for the Vic 20 range from £4 (for Frog) up to £6

'Most of the art work I supply I go independently to people who may be my age I put feelers out If someone comes up with a good thing I pay for it,' Jones said

The covers of Sprite Man and Panic were drawn by the sister of A. Challis (Jones never reveals the christian names of his authors), who wrote Frogger 'Their parents think it is the best thing they have seen,' Jones enthused

'I do my own packaging, my own duplication When I broke with Jeff, I took the copier Now I have another system which produces 300 copies in one hour I do all this myself I employ a full-time person who works 40 hours a week duplicating. I try to keep everything inhouse copying advertising, duplication

'I seem to be giving too much back to the customer I have been told I am an idiot 'Why charge £7 when you know it is worth more? The games are better than some others'' I am too soft on the customer But that will build up a good market share They all come back

'Someone – say a schoolboy with £5 per month pocket money – may order just one cassette His father may send the actual cheque Then a few weeks later I get another order from the same person He's saved up his pocket money again, to buy another tape A lot of other people do not have this loyalty Their games are expensive,

and some users feel they have not got their money's worth

'I do not reckon it is the best soft ware in the world ' Jones deprecated 'But it is value for money I do not market rubbish – it would ruin the name I am building now '

The company is getting to the stage where even Jones' parents are helping out. His father is working on the exhibition stands this year 'I need more staff because I cannot cope,' Jones said 'The market demand is growing so quickly The people that were small – wholesalers, etc – and ordered small quantities from me are now ordering more because they have grown The shops are sold out of cassettes almost as soon as they appear Which is good, really '

Commodore itself has got into the act It is currently advertising seven of Interceptor Micro's games in VicSoft Commodore's Vic 20 user catalogue

'Frogger is just for the UK market,' Jones said They are all arcade clones, arcade rip-offs They are a problem because you cannot sell them in the US where copyright rules are stricter I am selling Puckman for example, on Atari's Pac Man advertising.

'Because I cannot find an interna tional market, I am bringing out more original software At the moment, I can only sell in the UK. When I showed Frogger 64 at a computer show in America, I was told to turn it

'MONEY CANNOT BUY PROGRAMMING SKILLS BUT IT HELPS. IT BUYS THE EQUIPMENT TO DEVELOP THOSE SKILLS'

off immediately The dealers were afraid of a law suit if they showed it for even just a few minutes "Come up with original software, or we can give you ideas to develop into games," they said

'Jeff is now writing for an American company They are using English brains because he is the best. Now they are looking at my stuff, which is coming up to the same sort of stan dard But it is not the right sort.'

Jones is looking for a freelance machine-code programmer 6502 or Z80 'I feel there are many people out there as good as Jeff if only they could be developed right There are people who are as good – or better – than anyone else in the world But they do not have the equipment, the facilities

Money cannot buy programming skills but it helps It buys the equip ment you need to develop those skills

'As far as wages go, the only thing I have had from the company is my trip to America I do not take a wage I don't take a wage from the video shop either I probably live on £20 a week – sounds ridiculous, doesn't it? I don't drink, I don't smoke, I don't socialise ' He paused 'Well, not much '

'My prime interest in life is to make money Maybe I will retire early I am a weird sort of character I have just come back from Florida and Chicago, where I saw the Consumer Electro nics show I found more enjoyment walking round Chicago, which is a grotty place than having a rest on the beaches of Florida or going to Dis neyworld That's because I am fascin ated with electronics It is not work to me

'I would like to retire at 25 If you have enough money you cannot get bored. People say that if you are rich you are unhappy But if you are poor you can be unhappy, too I would probably still own the businesses, even when I have retired

'I see my role like that of a bloke who runs a record company, except I don't rip people off I could have been stingy – bargaining with programm ers, being mean with the packaging – and made more money But I would not have their respect.'



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GALAXIANS The first 'arcade perfect' version of the popular game, written in machine code for super-smooth fast action play. Hi-res movements and superb sound effects make this the game either Oric owners will be tempted with. £8.95. 48K Oric. Tele version soon. Redefinition: Caroline Reussel.

MONSTERS Don't PANIC! Aliens in the maze of platforms and ladders on Saloon III you must find power-modules in the system guarded by the Monster-Robots. But you have your Last-Gun to blast through levels and send them smoking to their fate. One of the best 100% machine code games yet for the Dragon 32. £7.95.

ROBON Quite simply a spectrum leap better than other versions of Berserk for the Spectrum. Nine levels of play and full feature action including Robon chases, laser guns, and if you defy to long the Robot will get you! Any ZX Spectrum. £5.95 Redefinition:

JOUST You, White Knight on fly upon your Ostrich and do battle with the Dark Lords upon their fire lands. The most amazing hi-resolution graphics and movements ever on the ZX Spectrum. 16 or 48K RAM. £5.95 Redefinition: Andrew Sleaker.

FIREBIRDS Wave after wave of Firebirds and their cohorts the Blue Weavers and the White Stalkers, ever-phasing the machine coded super-smooth action and awards sets a new standard in shoot-em-up games. Runs on any ZX Spectrum. £5.95 Redefinition: Graeme Devine.

REPULSAR The last outposts of Mankind are under almost constant attack and you alone have control of the defense system. Fast and furious version of the arcade game Missile Command. Works with Joysticks. Any ZX Spectrum. £5.95 Redefinition: Andrew Beale.

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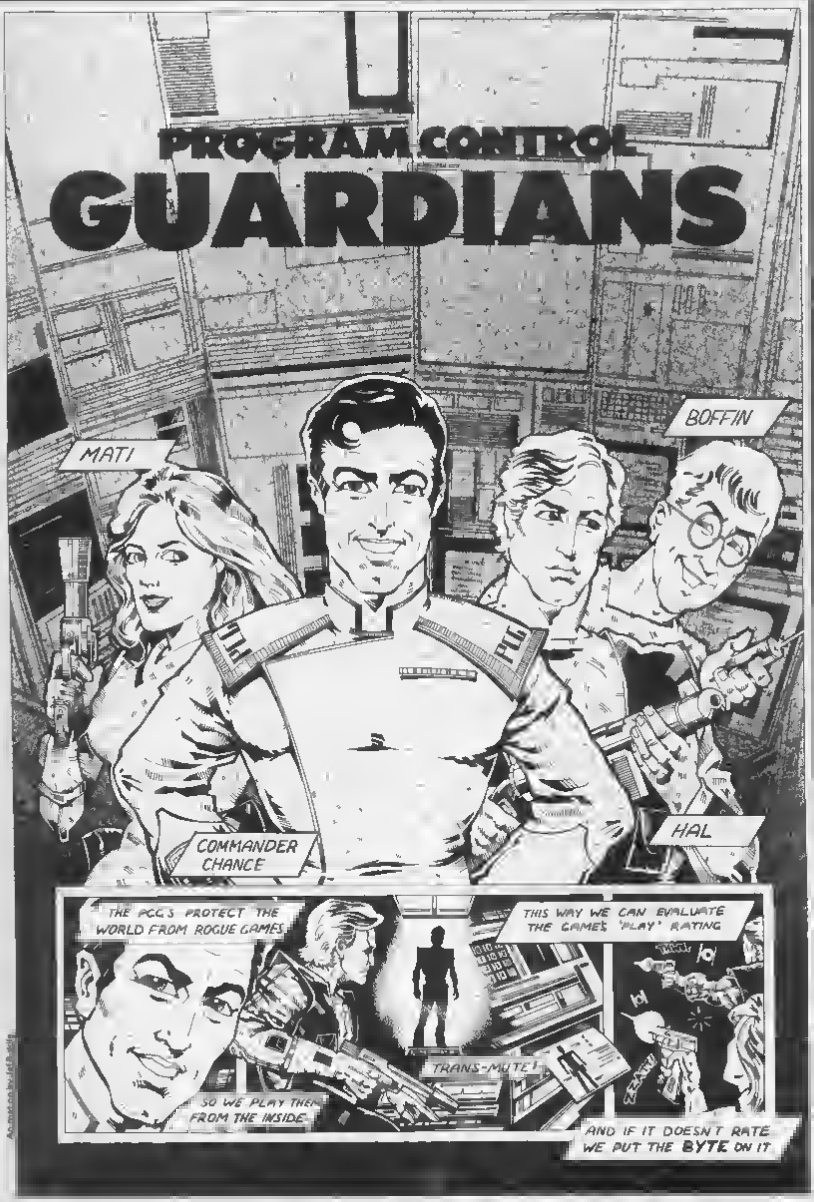
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PCG1

GET CRACKING!

HAVE A CRACK AT OUR NEW COMPETITION AND WIN AN M5 HOME COMPUTER.

Beat the software houses at their own game and write an original graphics adventure.

Programming for computer games is improving by leaps and bounds. Every machine plays games written not just by software houses but by users from nine years old upward. But there are now so many games about that the producers seem to be running out of ideas. Soon the success of a game will depend on the design underlying it rather than programming skills.

After a wave of Froggers, Flight Simulations, Pacmen and Donkey Kongs, the software houses are turning to the classics for inspiration. Adventure games are centred round Tolkien's *The Hobbit*, Carroll's *Alice in Wonderland*, even good old Dragons and Dungeons.

So here is a competition open to all our readers, whether you have programmed before or not. Let your imagination go wild and write an adventure. DON'T base it on a book or Dragons and Dungeons. The more tortuous and twisted it is, the better. Touches of humour are always appreciated. If there should be a tie, the adventure with the most detail will definitely have the edge.

The reward for the best adventure is a CGL M5 Home Computer worth £190. Newly released, the CGL M5 home computer package gives you everything you need to start playing immediately.

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There are four graphic modes which allow:

* 24 rows of 40 column text
* 768 user-definable characters of up to 16 colours each
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* view port facility
* separate graphics memory
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SOUND

* Three programmable tone generators
* Programmable white noise generator
* Programmable attenuation
* Simultaneous sounds

The CGL M5 has a Z80A CPU (3.58 mHz), 20K RAM (16K V.RAM) expandable to 52K and 16K ROM, expandable to 24K. Ent its graphics and sound make the M5 ideal for games enthusiasts.

The animation is jitter-free and the graphics on a par with the arcade machines. The sound incorporates a 'mini synthesizer' which can give you three separate voices with six octaves.

All entries must arrive at the following address by 31st August 1983. The Editor, *Personal Computer Games*, VNU Business Publications, 62 Oxford Street, London W1A 2HG. The judges' decision is final and no correspondence will be entered into.

The Autumn issue of *Personal Computer Games* will feature the winning adventure. And we will be offering another super prize to the reader who comes up with the best program for it.



THE PRIZE FOR THE MOST ORIGINAL ENTRY

The winner will receive a package that includes * CGL M5 Home Computer console (262 x 185 x 36mm, 800 grams) * Power supply unit * TV connection cable * Cassette recorder cable * Basic I cartridge * User's guide * Basic I manual *Easy Basic For Beginners* * Demo cassette tape, with two games.


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BOOSTERS

PERIPSERALS CAN SOOST YOUR MICSO'S POWERS ANR YOUS FUN. TONY RARRINGTON RAS SCOURER TRE SHOPS FOR YOU

There seems to be a new microcompu ter on the market every week But that is as nothing compared to the rich growth now taking place of computer peripherals of all kinds

You may want the freedom of a joystick for reflex-type games Or you may want additional memory or pro cessing power In every case, there is bound to be at least half a dozen suppliers eager to offer their wares

The ideal way of doing a peripherals round up is to group what is available for each brand of home computer But many suppliers offer add-ons for more than one kind of micro so the list becomes repetitive

In the first of our series of peripher als therefore we have listed the sup pliers The names of the micros are highlighted when the peripheral con- cerned is specific to a particular machine

First in our list is Flight Link, which is based in Alton It makes three ranges of joystick suitable for a wide range of micros The first model in the range is the J1 This has dual axis carbon track controls and comes with or without cases switches and cables

The second, JS2, has high-quality, all-metal dual controls At the top end of the range which will be outside the pocket of most micro-enthusiasts, is the JS4 It has inductively coupled contactless joysticks

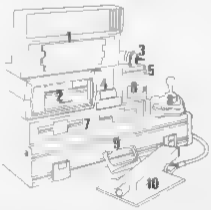
This firm takes the business of mak ing joysticks very seriously It pays a lot of attention to unique demands, such as the control of puppets or the movement of vessels under water Its products range in price from £3 to a staggering £1 000

Akhter Instruments based in Har low, also has a range of peripherals In particular, there are three types of green monitors the Hitachi MM1216 at £102 35, the SM12H 18MHZ monitor at the same price, and the cheaper, if less powerful SM12N 15MHZ at £79 35 All prices include VAT

The company also offers 14-inch colour monitors whose prices range from £239 plus VAT for the normal resolution of 400 dots up to £499 plus VAT for the high-resolution 800 dots screen

SIR Computers, from Cardiff, sup plies a Z80 disk pack for the BBC Micro at £895 That sounds steep but the system aims to be a sophisticated development of the machine s poten- tial

It connects to the BBC micro in the same way as a normal disk drive It then opens up the whole range of CP/M software for business and dataprocessing as well as games This is because the firmware supplied with the machine allows you to switch between Basic and CPN, an operating



Key 1 ZX81 keyboard 2 Atari disk drive. 3 Flight Link joystick. 4 Sinclair 16K RAM pack 5 Dragon 32 sound module 6 BBC Hobbit storage unit 7 BBC disk pack 8 Kempston joystick. 9 Spectrum microcase. 10 Securit anti-theft device.

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4. ARROW OF DEATH (Pt. 2) — You now have the means to destroy your enemy but you are far from home and this land is strange to you Can you cope with the deadly perils which approach you and have you the strength to see your mission through to the final conflict?
5. ESCAPE FROM PULSAR 7 — Alone on a gigantic Space-Freighter The rest of your crew have died horribly at the hands of a mutated Zoo-Specimen Your only chance of escape is to reach the Frail Shuttlecraft But the lurking Monster is hungry and you are the only food it has left
8. CIRCUS — Your Car has run out of Petrol on a lonely road miles from habitation As you trudge resunctantly down the road in search of help you are suddenly confronted by an amazing sight In a nearby field is a Huge Circus tent! But the is no ordinary Circus as you will soon discover
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8. NEW — THE WIZARD OF AKYRZ — You are in the Royal Palace The King beseeches you to rescue his daughter from the evil wizard If you succeed your reward will be priceless failure will bring certain death
9. NEW — PERSEUS AND ANDROMEDA — Travel into the realms of ancient mythology Battle with grotesque monsters and supernatural powers as you search for the hidden secrets of myth and legend
10. NEW — TEN LITTLE INDIANS — This mystery begins with a train journey into a strange country What secrets are held by the strange country mansion? What meaning is attached to the strange idols? Maybe you will find out if you live long enough

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The Hobbit is a memory storage device for the BBC

19 system developed from CP/M 2 2

The disk pack also, of course, provides a dual 2 x 400K disk drive for use with the standard BBC Basic The machine is able to run CP/M because it includes a Z80A processing card with its own 64K RAM card, which communicates with the 6502A in the BBC computer

The supplier claims that, in most cases the speed of execution of programs is improved by up to 50% compared to conventional single processor computers

Computer Concepts has had considerable coverage for its Wordwise ROM-based word processor for the BBC micro The price is £39 plus £1 50 for postage and packing, VAT is on top of that The 'chip' plugs into one of the empty sockets inside the machine

It is supplied with a spiral-bound manual and a cassette which contains an example document and a free Typing Tutor program

Basingstoke supplier Fox Electronics offers the Vixen RAM cartridge for the Vic 20. This cartridge is switchable between 16K or 8K and 3K. It plugs into the rear expansion port and should be fully compatible with all motherboards and modules No readdressing of existing Basic programs is needed The price is £39 95

The same supplier also offers a 42 key travel keyboard for the Spectrum You are supposed to be able to remove the ZX printed circuit board from your Spectrum and simply screw it down into the keyboard case The supplier promises that no soldering is required This costs £31 95, including postage and packing.

There is also a ZX Panda 16K RAM pack for the ZX81 This is expandable to 32K with a plug-in module from the same supplier It includes a LED power indicator and is designed to connect without risk of the wobble that plagued the early Sinclair RAM packs Prices range from £19 95 to £46 00 including postage and packing.

For users who don't like the standard ZX81 keyboard there is a replacement keyboard with a calculator-type design This is a stick-on replacement and is priced at £9 95 from Filesixty



The Flight Link joystick

Those of you who are being slowly blinded by the glare from your TV set being used as a monitor might like to try out the effects of antiglare screens Merseyside firm Datatel Business Products offers a range of antiglare screens which give a sharper, clearer image and cut down eyestrain The price is £19 95 plus £1 80 for postage and packing

Datatel Business Products also makes a multi-purpose computer stand which has an all-steel construction This comes as a self assembly kit and there are two sizes two foot and two-and-a-half feet in height

KK Electronics, of London, has a range of colour monitors compatible with the BBC, Lynx, Oric, Acorn and all other computers with RGB

The monitors have a 16-colour display plus a brightness control There is also a quality sound amplifier with loudspeaker control Prices start at £239.95, plus VAT.

A speaker which plugs into the microphone socket of the Spectrum and boosts the sound output is sold by Alan White, of Poole. The speaker comes complete with volume control and needs no soldering It costs £5 50 inclusive of postage and packing

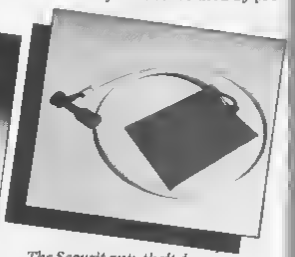
If you are worried about thieves making off with your home computer, you can at least ensure that they have to go to the trouble of taking the table with them, thanks to a little device from Ofco Ltd

Called Securit, the locking device fixes to the desk top without the need for any holes being drilled It costs £29 95 plus VAT

More and more games designers are adding complex sound routines to their offerings But for those Dragon owners who reckon that the sound of their machines still lacks a little, JCB Microsystems offers the Sound Extension Model for the Dragon 32 The price is £34 95 including VAT

The sound extension model looks much like an ordinary games cartridge and plugs into the Dragon's expansion port. Based on the AY-3-8910 sound chip, the module adds an extra command called MUSIC to Basic The range of possible sounds is specified as numbers and characters

A sound synthesiser as used by pro-



The Securit anti theft device

fessional musicians this is not. For the price, you wouldn't expect it to be But it will produce a creditable set of tunes and a variety of games noises from wailing sirens to bomb blasts

The novice computer user will probably not have his (or her) machine long – and will run only a few programs – before the need for more memory becomes apparent. The BBC Model B for example has excellent ROM facilities but has used up quite a bit of its RAM space accordingly

BBC Micro users after more storage will find the quaintly named Hobbit tape system worth a look Made by



The Kempston joystick



The Cheetah RAM pack



The Micro Aid case

Ikon Computer Products, the device operates as a sort of half-way house between cassette and disk-drive storage media

It comes in two parts a cassette unit and an integrated circuit which contains the tape operating system to drive the Hobbit This last comes as a ROM card which has to be inserted in one of the three sockets in the BBC before the cassette unit can be used

It represents a faster, more efficient and effective way of storing data and programs than conventional cassette recorders And it has a number of commands which deal with the saving and loading of data

The Hobbit cassette unit is about three and a half inches wide, roughly the same in height, and four inches deep It weighs two pounds Four large rubber pads on the base ensure that the equipment stays on the table instead of skittering off onto the floor

The device has a data transfer speed of 750 bytes of data a second, five times faster than ordinary cassettes The price is £135 plus VAT

Kempston Micro Electronics has a joystick named the Competition Pro for the ZX Spectrum It is a nylon and steel construction with a self-centering stick and two fire buttons It plugs into the Spectrum expansion port You can buy it at WH Smith branches for £25 including VAT The same supplier has joysticks for the VIC 20 and the Atari 400 and 800 They come at the somewhat cheaper price of £16 50 including VAT

Microcell Computer Systems, based in Leeds, advertises the Sinclair ZX 16K RAM pack at £28 50 The company also has a range of monitors including the BMC BM12E green monitor and the Sanyo SCM12H green monitor-both for £100

Cheetah Marketing, London has an even cheaper ZX81 compatible RAM pack at £19 75 and the 64K RAM pack at £44 75 Both prices include VAT and postage and packing

Warrington firm Micro Aids has thought up a way of allowing keen Spectrum users to take their machines with them wherever they go The Spectrum/ZX81 microcase is designed to hold the computer power supply, printer and rampack, with space left over for a cassette recorder or the fabled Sinclair micro drives

The supplier advises that the shallow tray which contains the case can be used as an attractive desk top console And the detachable top of the case could be used as a TV stand The price starts at £29 95 including VAT

The Harrow-based firm Home Entertainment Centre has a number of add-ons for the Atari 400 and 800 In addition to joysticks at £14 95 there is a keyboard at £79 95, a 48K expansion at £99 95 and a disk drive at £289 99

If you have wanted to make your micro talk back the Namal Supertalker is a useful extra It comes from Namal Associates in Cambridge Priced at £89 95, it has an extensive built in ROM/RAM dictionary and a standard RS232 interface

It will run on a number of different micros And as it is a phoneme synthesiser it is not limited to particular words It has been designed around the Votrax SC-01A phoneme speech synthesiser chip You create words by using a sequence of codes to build words out of component sounds

Up to 200 to 250 new words can be dumped into the device's RAM to add to the 550 high usage words already stored in ROM Special versions are available for the ZX81 and the Spectrum These versions are memory mapped In compensation, the price for these two models is £49 95 including VAT



The Hobbit, ready to load

Finally Hendon based Vulcan Electronics offers the Spectravideo Quick Shot joystick Similar to a helicopter joystick, it enables you to control and fire at the same time, with one hand It has a rapid fire button on top of the handle And there is an optional left hand fire button at the base which can be used simultaneously

As the Quick Shot comes with four suction pads, there is no need to hold down the base

The Quick Shot joystick can be used for the Atari VCS system, Vic 20, Commodore 64 and Atari 400/800 It costs £11 95 including VAT

USEFUL ADDRESSES

If you would like to know more about the products mentioned in this review you can contact the manufacturers at the following telephone numbers Addresses are supplied where no number is available

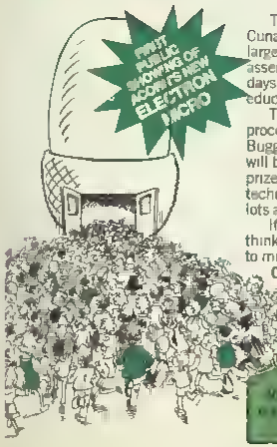
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JCB Microsystems, Poole	(0202) 423973
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Micro Aids, Warrington	(092) 576 2613
Microcell Computer Systems, Leeds	PO Box MT12 Leeds 17
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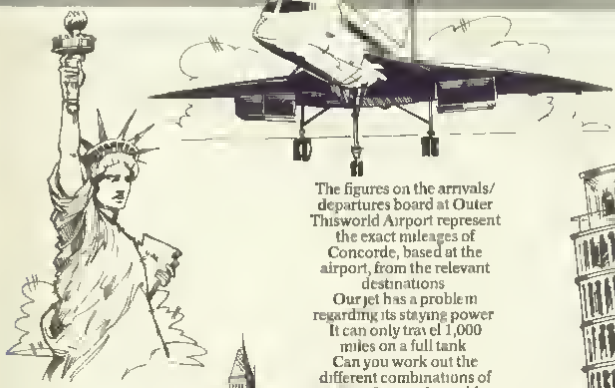
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The figures on the arrivals/departures board at Outer Thisworld Airport represent the exact mileages of Concorde, based at the airport, from the relevant destinations

Our jet has a problem regarding its staying power It can only travel 1,000 miles on a full tank

Can you work out the different combinations of cities Concorde could visit using every drop of its fuel each time? And remember, due to customs restrictions in Outer Thisworld Concorde must return to base after visiting one city and before leaving for the next during each 1,000 mile trip

Answer on page 112

FLIGHT INFORMATION

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PARIS	376
NEW YORK	150
LONDON	188
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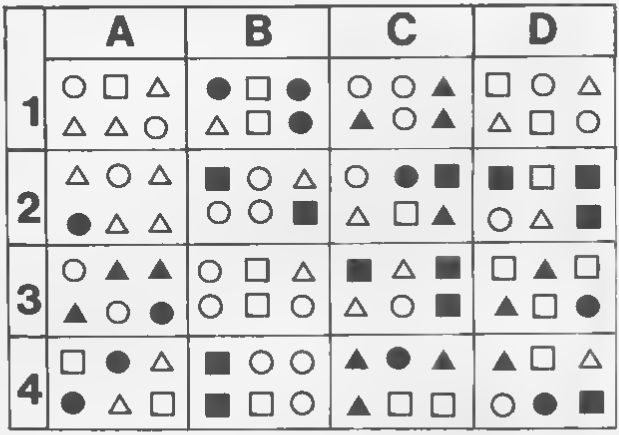
THOUGHTS

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This thousand fold magnification of a silicon chip is actually divided into sixteen rectangular sections of equal size.

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Which are the two 'identical' sections?



Answer on page 112

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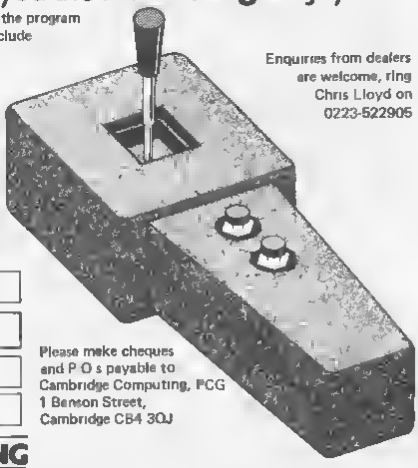
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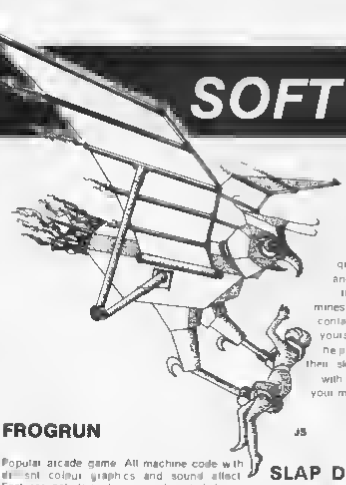


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GALACTIC ABDUCTORS

A stunning action packed game which [illegible] all of your TV screen. [illegible] the superb large animated graphics Giant Space Hawks will [illegible] and weave intricate patterns as they drop their deadly homing mines which will destroy your base on contact. While you are busy defending yourself the Hawks will feed on your helpless population returning only their skulls. All M C game complete with high score table that will blow your mind with its graphics and sound effects.

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SLAP DAB

An exciting game based on the arcade game PAINTER which combines fast action with strategy. Paint insects hiding under the old paint surface are released by your paint brush. You require fast action and quick thinking to outwit them and finish the pane[illegible] The game is 100 percent machine code and HI RES graphics also includes HI score and running score with brilliant sound effects.

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CRAWLER

All M/C version of Centipede

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A fast 3D game for the V.C. A though badly wounded your [illegible] determined to seek and destroy the marauding space pirates who have now imprisoned sound the galaxy in search of fresh prey. A thrilling Star Trek game with a difference spectacular 3D graphics and real arcade actions.

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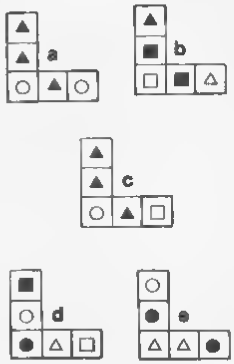
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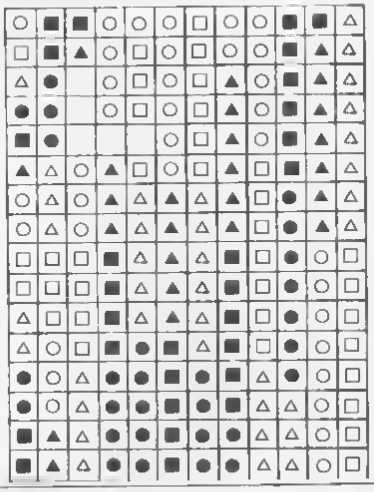
THOUGHTS

The computer print-out below contains some sort of logical reasoning as to the positioning of the various symbols

Without the correct vital missing piece the computer malfunctions and orders you 20 King Prawn Balls from the local takeaway instead of booking two weeks for you and your mother in the Seychelles

No doubt some would be more than tempted to insert the wrong piece and get a liking for Chinese food in great quantities, but can you work out which piece logically fits into the gap anyway?





Answer on page 112

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BLACK CRYSTAL *An excellent graphics adventure (S User)* The massive 180K of program loads from [illegible] chapters You must solve each of the 6 stages to defeat the Lords of Chaos [illegible] monster battles [illegible] command keys Instruction manual (Carnell) £7 50

THE HOBBIT *Takes first place for quality and value for money (S User) A marvellous game should set the standard* Z(Comp [illegible] 285 p illustrated book contains clues to help you 30 beautiful full screen pictures 500 word vocabulary 16 page instruction manual it took 4 people 18 months to write [illegible] £14 95

RESCUE *Excellent the best adventure game I have ever played (PCN)* 20 page clearly written on screen manual leads you to very [illegible] stage adventure Four skill levels Full information on screen plus a map when you need [illegible] Great fun (CRL) £5 95

TRADER *Great fun much more entertaining than the usual adventure Your Computer)* Great spaceships, pretty maps animated graph [illegible] adventure that loads in 3 parts *Outstanding (P C T)* (Quicksilva) £9 [illegible]

PIMANIA *Amusing and brilliant the graphics are excellent (S User)* [illegible] wonderfully witty adventure great graphics and [illegible] Golden Sundial of Pi (Automata) £10 00

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MAKING MICROWAVES

The appearance of the Oric 1 has demonstrated once again the almost comical inability of British micro manufacturers to launch a new machine properly. Funded by British Car Auctions and using the considerable experience of Tangerine Computers, the Oric is aimed at the fastest-growing sector of the micro market the sub £200 home computer.

The delivery difficulties that dogged both the BBC micro and the Sinclair Spectrum should have alerted Oric to the pitfalls ahead. But the new company observed its rivals' mistakes, then promptly repeated them.

As a result of this short sightedness, reviews have already appeared in some magazines that will have dissuaded a large number of prospective purchasers from buying. These reviews have contained wrong information and have failed to mention any of the Oric's strong points. This is no reflection on the journalists involved – there is no way they could have done a proper job with the material.

A BASIC ASSET

First of all, let it be said that the Oric 1 represents extremely good value for money. It is a 16k colour and sound machine, with Centronics printer interface and RGB monitor socket fitted as standard. The price? Under £100.

I suspect that most people will go for the 48k version. At £170, it is slightly dearer than the 48k Spectrum. Indeed, it seems inevitable that the Spectrum will be Oric's main rival.

In our review machines ROM chips were not fitted, instead, there were two EPROMs. All references to 'ROM in this review should take this into account.

Measuring 280 x 175 x 52mm, the Oric weighs in at 1.1kg. The keyboard has 57 keys, described as possessing 'tactile feedback'. They are a sort of halfway house between a full keyboard and the Spectrum 'dead flesh' keys. The keyboard is considerably less cluttered than the Spectrum's, with a maximum of two functions per key. The cursor control keys are sensibly arranged on either side of the space bar.

On power up, the display is in TEXT mode with the caps lock on. This is important as all keywords and variables must be entered in upper case. Any attempt to user lower case is met with '?SYNTAX ERROR'. Variable names can be of any length, but only the first two characters are recognised. Great care must be taken when choosing variable names as the Oric is fussy about what it will accept.

Despite the fact that only the first two characters are significant, reserved words anywhere in the variable title will stop execution of the program. Unfortunately there are a lot of reserved words, and the characters that make them up occur in many descriptive names. You cannot have a variable called 'SCORE', for example, as that contains the Boolean operator OR. TO crops up in 'TOTAL'. And it is all too easy to overlook combinations including ON, AND, IF. The manual is reticent on this subject. It warns against the use of 'PIG' or 'PIPES' as they both contain PI, but then gives 'JONI' as an example. This contains the reserved word ON and thus doesn't work. This will prove irritating.

The Oric uses an extended version of Microsoft Basic. Unlike the Sinclair dialect this does not use 'tokenised' keywords. All these have to be entered in full.

This Basic is an extremely good implementation, with features not often found on more expensive computers. As on the Spectrum, computed GOTOs and GOSUBs are supported. A line like GOTO A*100 is quite in order, assuming you have given A a value earlier in the program.

Structured programming purists will be glad to see that you can GOTO or GOSUB a label. Define COUNT as, say, 500 and you can quite happily GOSUB COUNT at any time. This makes renumbering of a program considerably easier. You simply change the initial value assigned to the subroutine rather than going through the whole program line by line.

A word of warning to Sinclair users however. The Oric requires you to hit line oumbers exactly. On the Spectrum you can GOTO 499 even if there is no such line, execution will continue from the next line. On the Oric this will halt the program.

Generally the Oric Basic has more to recommend it than Sinclair's version. Other commands supported by Oric but not by the Spectrum include REPEAT UNTIL, DEEK and DOKE, CALL, DEF USR, FRE, IF THEN ELSE, LOG ON GOTO/GOSUB, SPC, TRON and TROFF. There are a few more that apply to HIRES mode only and are thus not strictly comparable.

In addition to TEXT mode, there are three modes for graphics on the Oric. LORES0, LORES1 and HIRES.

For low resolution graphics, TEXT mode can be retained. Or you can select either of the two LORES commands.

COLOUR SPLASH

Screen resolution is theoretically 28 lines of 40 characters. But in most cases the far left column cannot be used as it contains the attribute controlling the background colour for each row.

Colours can be set globally, using Sinclair-style INK and PAPER commands. They can also be set locally by POKEing or PLOTing attributes onto the screen. If colours are set globally you should note that INK and PAPER will change the whole screen instantly, without a CLS command.

When POKEing or PLOTing on screen, take care that codes are entered at a blank area of the screen. Failure to do this will mean that any character already there is overwritten and replaced by a space. When working in LORES0, the alternate characters can be accessed by using PRINT CHR$(9) and the standard set regained with CHR$(8).

In HIRES mode, the screen is divided into pixels with a resolution of 240 x 200. You are not limited in the number of colours displayed and the Oric gives more flexibility than does the Spectrum in changing colours. Each attribute will work on an area one character square in width by one

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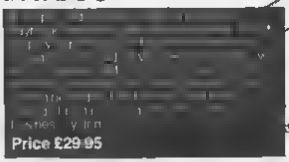
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pixel in depth So you can have 200 lines of alternating colours down the screen

The definition is generally very good, with each colour sharp and distinct Characters can be plotted onto the high-resolution screen using CHAR. And there is provision for three lines of text to be entered at the bottom of the screen

Drawing is simplicity itself Move the cursor to the relevant place with CURSET followed by the pixel coordinates and what is described in the manual as an 'FB' number 'FB' stands for foreground or background and thus lines or points can be plotted or erased

Relative moves are handled by CUR MOV which has the same syntax CIRCLE draws what should be a circle but appears to be an ellipse

Oric supports eight colours The advertisements rather misleadingly claim 16 but this just means eight foreground and eight background

USER'S FRIEND

There is only one level of brightness Against this must be set the fact that the Oric is extremely flexible in dealing with text formats Characters can be normal or double size flashing or steady And this is achieved with a minimum of fuss by using the CTRL key

It is easy to define your own characters, using either the standard or the alternative character set. Characters are unusual in that they are defined on an 8 x 6 grid with the leftmost two columns always being blank

For anyone used to the weedy BEEPs produced by the Spectrum, the Oric's sound facilities will come as a revelation In addition to the arcade style preprogrammed noises such as PING SHOOT, ZAP and EXPLODE, the Oric has three tone channels and a noise channel You can manipulate the latter to produce effects that are limited only by your imagination With a range of six octaves, some impressive music can be obtained

Sound generation is controlled by the MUSIC, SOUND and PLAY commands The output is defined with MUSIC and SOUND and the envelope by PLAY The envelope determines the shape' of the sound, so you can decide whether it starts sharply like a guitar or smoothly as on an organ There are seven shapes which can achieve some stunning effects

The sound commands are relatively complex but the results are well worth the time and experimentation

Volume can be set in SOUND and MUSIC statements in the range 1 to 15 One thing you have to remember is to include a PLAY 0 0 0, 0 program line – otherwise the last note played will continue indefinitely

Sound is definitely one of the Oric s strong points It is not on a par with the BBC machine But it could well be a deciding factor if you are hesitating between buying an Oric or a Spectrum

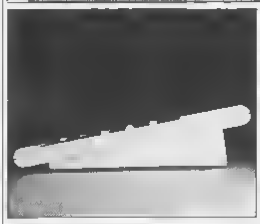
To conclude the Oric is an extremely good machine and one that represents extraordinarily good value for money There is no doubt that it will prove to be a strong rival to the Spectrum in what is an extremely competitive sector of the market.

That said, I think the Spectrum may be a better machine for an absolute beginner The graphics facilities are easier to handle on Sinclair's machine and the Spectrum manual though far from perfect, is more helpful than Oric s Sinclair's tokenised keywords are also probably easier for the beginner

There are some glaring faults In each of the four models I looked at, EPROMs were installed instead of ROMs and the Basic contained some annoying errors I had assumed that these would be corrected before the machines were sent to customers But it appears that some Orics have been sold through the Spectrum (no relation) retail chain Presumably Oric will replace these faulty models – under the Sale of Goods Act the customer is entitled to either a new machine or money back

When the present bugs have been dealt with, and if Oric rewrites its manual to a higher standard then the Oric- 1 should become a best-selling success **SM**







Top the Oric-1 keyboard is less cluttered than the Spectrum Left space age profile and handy tilt for typing Above RGB socket and Centronics interface built in

WHAT WILL IT COST?

Oric 16k	£99 95
Oric 48k	£169 95
Oric communications modem	£79 00
Oric microdrive	not yet available

TECHNICALITIES

Processor	6502A
RAM	16k or 48k
ROM	16k
Keyboard	57 key, tactile feedback ASCII, auto repeat
Screen	domestic TV, provision for RGB colour monitor
Disk	microdrive, not yet available
Language	Basic in ROM

The Lynx is enjoyable to use It can produce impressive visual effects easily and has a good range of useful, if slow, functions It also has lots of potential as a good home computer as a CAL machine or as a small business micro

If you bought one now, you would find you could have a lot of fun with it, But the Lynx has had production problems First, the machine itself was late There is little software as yet. And there are no definite dates for other hardware to come Its popularity will depend on how fast manufacturer Camputers can produce these and on the Lynx offerings from the various software houses

The machine reviewed here is the standard 48k model 92k 128k and 192k versions are available and smal ler machines can be fully upgraded internally An upgrade to either 128k or 192k will increase the screen resolution from 248 x 256 to 248 x 512 It will also give an 80-column display

The actual measurements of the machine are 34 5cm wide, 21 5cm from front to back and 6 5cm at the highest point

When you first switch on, the Lynx prints its logo, complete with a little pawprint at the top left of the screen Under this comes the prompt Ready" and a 'greater than' sign followed by a flashing block cursor



The Lynx a proper keyboard

The display is quick to appear and very crisp Initial tuning is very simple and once set, it rarely drifts off frequency The only problem is that the display is rather too sensitive to the position of the TV leads Jerking this or loosening it slightly – as can happen when the TV gets knocked – can cause the screen to waver The colours are very vivid and crisp and they don't drift when the machine is tuned Full upper and lower case lettering is provided directly from the keyboard

Performance varies from TV to TV I found the Lynx would not produce colour at all on a nine-year-old Ferguson (neither would the Spectrum), but it worked well with a Sony Trinitron and even better with a small Hitachi portable If in any doubt, do consult your dealer

The Lynx provides eight colours, including black and white These are coded from 0 which is black, to 7 which is white You can use the colour's name as well as its number I found that this improved program readability

PROTECT is a command which gives some interesting visual effects The Lynx sends colour signals as a mixture of three colours red blue and green If you type PROTECT RED, everything in red already on the screen cannot be cleared or overprinted But any new characters or lines with an element of red in their colours will have the red removed

You can also protect subcolours like magenta or cyan. which means you can print on the screen in only one colour PROTECT 0 (black) returns you to a three-colour mix again Protecting white will stop anything from being written on, or erased from, the screen

It can be unnerving if you forget that anything already on the screen in the protected colour cannot be moved It looks as if the computer has crashed (hard crash, I mean) if you have listed a program and then run it with a PROTECT statement before a CLS statement

Colour mixing is possible using a find chequered graphics character (CHR$(242)) as it is on the Spectrum You can do this only in squares, but the crispness of colour makes it very striking

You can also define your own char-

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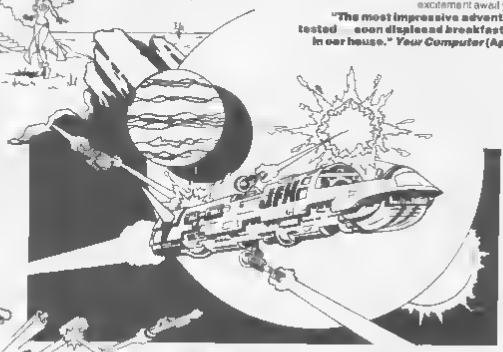
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acters The Lynx character matrix is 6 x 10, which is unusual It leads to rather elongated lettering but is not unattractive

The Lynx's screen resolution – 256 x 248 – allows some impressive drawing effects DOT, DRAW, MOVE and PLOT are the relevant commands DOT puts a dot on the screen at the specified coordinates DRAW puts a line on the screen from the last point plotted, or the last position of the graphic cursor, to the point specified MOVE simply moves the invisible graphic cursor to where you tell it to go PLOT is rather unnecessary it has five modes combining all the other graphic commands along with a relative move and draw In other words, the coordinates represent the amount by which the cursor moves, not the position at which it ends up

Line drawing is crisp clear and fast Lines can be put on the screen at quite steep diagonals without an ugly 'stepping' effect. My big reservation about Lynx graphics is that there is no easy way to fill a shape The only way I could find to do this was by plotting individual dots, which is slow and inaccurate It may not have been possible, but a PAINT or FILL command would have made a good replacement for PLOT

Pixels are individually colour definable When the DOT command is used, they prove to be very fine and clear in any colour

OPEN WINDOW

One interesting idea is the use of PRINT@ and WINDOW Both use columns two pixels wide PRINT@ uses rows to the highest resolution of 248 to put letters exactly where you want them on the screen So you can mix text and graphics tidily WINDOW specifies the size of the text area You specify the first and the last column +1, and the first and last row +1 to change the part of the screen on which you want to print

Some fascinating things can be achieved here by using WINDOW in conjunction with PROTECT Again, I have one reservation a quick normalising command would have been handy to reset the window to its default. As it is, you have to remember the coordinates of the normal text window and use those numbers to put things back to normal

The VDU is another Lynx oddity This uses CHR$ (ASCII) codes 0 to 31 to perform cursor movements and other graphics commands It is also used for the power-up beeping noise You can use PRINT CHR$ to do the same thing, so the VDU is rather unnecessary It is, however, quicker to enter than PRINT CHR$

Three of the facilities here are really striking The first is VDU 12 – overwrite This is like the Spectrum's OVER command and is turned off by inputting VDU 20 Secondly, there's VDU 24 – double-height charecters (turned off by VDU 25) You can obtain striking effects by mixing single- and double-height text Lastly, and more subtly you can employ superscript and subscript on text This simply means moving the cursor up or down to give an overlapping effect

The other VDU codes are for such things as carriage return, colour change, line feeds and backspace I'll make a huge criticism here the screen does not scroll

Sound is based on a digital/analogue conversion principle and is used with two commands BEEP and SOUND

BEEP is followed by three figures broken up by commas They stand for wavelength, number of cycles and volume Volume is specifiable from 0 to 63, and wavelength and number of cycles from 0 to 65535 The wide parameters make for an impressive range of sounds

SOUND is a machine code based command You can POKE several consecutive addresses with appropriate values type in SOUND and the first of these addresses The computer will read them and convert the values to sounds stopping when it reaches a value of 0 This could conceivably be used to synthesise speech

You can incorporate machine code into Basic programs by prefixing each line with CODE INP and OUT read



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RAM	48k (16k graphics 16k user) expandable to 192k total
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or send data from/to specified Z80 parts.

A machine code monitor can be accessed from Basic by typing MON, it is exited by typing 'J'. This includes a breakpoint facility as a debugging aid.

On the subject of Lynx Basic, I've got no choice but to express stern reservations. Some of the effects which can be obtained with ease are really striking, but the overall structure is not in keeping with the reasoning behind it. At first sight it looks fantastic from a programming view, but using it for a while reveals serious disadvantages.

David Jansons, who designed Lynx Basic, has had a lot of experience of Microsoft and TRS-80 Basic. 'I don't like them,' he said. His aim in putting together a highly non-standard Basic was to make it 'as structured as possible'. Considering he put the original interpreter together in little over four months, it's quite an achievement. But it has been regularly amended since the machine was announced in September.

It includes some very odd qualities indeed, the reasoning behind which seems a little strange. First and foremost, it won't allow multi statement lines. The next oddity lies in the number of loops and conditionals provided. Unusual facilities include, most notably, the ability to change the cursor character and the rate at which it flashes.

Debugging is made easier not only by a flow trace but also by a command SPEED. The latter sets the rate of program execution, so you can slow down the program lines to see exactly what's going on. Editing is fairly simple.

Lynx Basic has several omissions which appear to have been replaced by unnecessary trimmings. It repeats itself and thus leaves out more important things. The lack of a reset key makes it possible to get into a terminal crash very easily – for instance if you get stuck in an input loop you cannot use ESCape to get out of it and you have to switch the machine off. A little thought here would have made all the difference.

Camputers has made dealer agreements with Spectrum Computer Centres and with Lasky's. No plans for more dealers are in the air as Camputers does not want stock-flow problems. It plans to have produced 40,000 Lynxes by the end of this year.

A 12 month warranty is tacked onto the package but this excludes labour. Servicing after that will be carried out by subcontractors and by some of the retailers.

MB



The Lynx's casing is neat and stylish

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'Try before you buy,' warns the author 'Don't buy any micro through mail order unless you have been able to inspect the machine beforehand,' he adds

There are 13 chapters in all They skim over a wide span of subjects – hardware, software, technology, programming and other relevant matters – to give a general feel of the micro market A glossary of computer jargon rounds everything off

Although supposed to be aimed at both home and business users, the book tends to favour business In the last chapter for instance, the home user loses out when a list of business packages is given

Another problem which besets all books of this nature is that they can get out-of date quickly

But if you need some rough guidelines before reaching for your chequebook *Choosing a Microcomputer* isn't bad value **Wendie Pearson**

COMPUTER LANORARES ARR THEIR RSES RY RARRY MARSBALL, PRRLISRER RY ORARARA AS A 108-PARE PAPERBACR AT £5.95

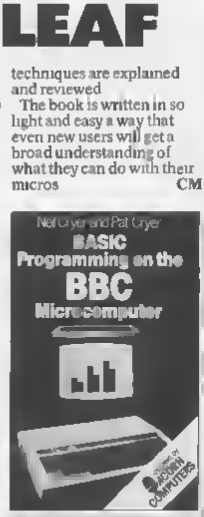
No one can say that this book alienates the newcomers With the opening line A computer language is a language for communication with a computer it takes a stand among the not-too-advanced users

Garry Marshall takes you through Basic and out the other side to Prolog Gino-F, Comal and Lisp

There's a discussion of language development before a comparison of Basic with the other languages There is also an explanation of how those languages can be used with databases, 3 D graphics, and simulation

The instructions are made clear with program listings and diagrams and techniques are explained and reviewed

The book is written in so light and easy a way that even new users will get a broad understanding of what they can do with their micros **CM**



RASIC PROGRAMMINO OR THE BBC MICROCOMPRTER BY NEIL ARR PAT CRYER, PRRLISBED BY PRENTICE BALL INTERRATIONAL AS A 195-PA05 PAPERBACR AT £5.95

Three cheers The authors have spotted that using variables such as X Y and Z complicates the issue You could easily replace 'oil filter' for X, 'oil' for Y, and 'labour' for Z

This book puts Basic in plain English rather than making it look like a mathematical mess It takes you from scratch and must surely be the toddlers' guide to learning Basic

Chapter 9, Animation for Games, had me glued to the spot, learning how to create animated snakes and bouncing balls And it continues to be very readable when it explains mathematical functions and string handling, file handling, programmable characters and sound

The cherry on the top is the mine of information in the glossary and index This book is well worth the investment. **WP**

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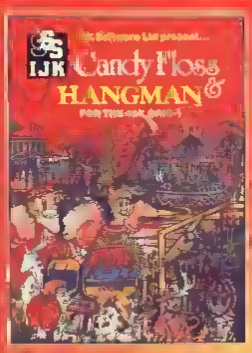
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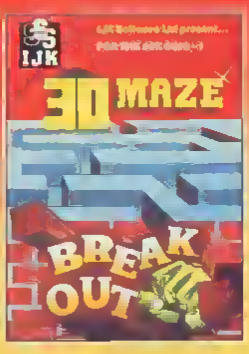
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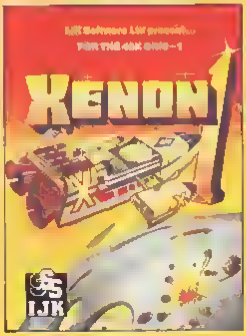






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STAR TR



CHALLENGE

Captain Kirk to Enterprise – we're trapped inside a vintage 1983 Welsh computer. Scotty, can you beam us up? Come in.'

'I'm sorry Captain. But thuh ship's in thuh grip of a terrible force called Basic, which is holding us and you inside the computer and leaving control of all ar lyves to thuh whim of sum 20th Century computer boffin. All ye can du is sit tight and hope thuh computer boffin knows what he's a-doin.'

'Thanks loads, Scotty. Remind me about this next time you need a wage rise. Kirk out.'

Yes indeed. Captain Kirk and his crew have been trapped on magnetic tape and stuffed into 20th century computers by large numbers of people. The latest of these is Salamander Software's stuffing of the good ship and her crew into the Dragon 32.

The game allows you, your Dragon and its joystick to steer the ship through a variety of obstacles and strange alien encounters. You must help the starship Enterprise complete its five-year mission.

HOW TO WIN

Well, knowing how to 'win' at Star Trek has as much to do with knowing how to play video games as it does to do with knowing about the TV series that has spawned so many computer versions of the game.

In this game, the only new civilisation you are likely to find is the good old Klingons. As the game opens, you are told that 'a force of Klingons has invaded federation space. Your mission is to rid the galaxy of this menace. Three starbases are standing by.'

The best advice is to read the manual thoroughly. You may think you know the Enterprise well. But she is a complicated ship and will need all your expert knowledge and advice to survive the hard times ahead of her.

VIDEO VERDICT

This is a must for Star Trek fans who have entered the Dragon. It neatly combines the adventure game-style text formats with some arcade action involving the Dragon joystick. A good game for both beginners, because it's challenging, and for experts – because it is so complicated you will spend a long time trying to figure out all its angles.

Price: £9.95 from Salamander Software.
Media: cassette **Requirements:** Dragon Data 32 with joystick
Language: Basic.

REK



Commander, you must get rid of the Klingons!

A map of your corner of the galaxy

Turn on the force field – how long will it last?

Hyperprobe launched

FROGGE



CHALLENGE

You are, believe it or not, a frog.

As a proud member of the amphibian race, you must get yourself across a highway, then a river and safely on to your comfortable lily pad.

The players of other video games might be 'green' with envy at this seemingly simple task, but there are real hazards to prevent you from hopping your way home. The highway is full of frog-squashing traffic. The edge of the road is riddled with starving snakes. And the waters are crawling with crocodiles.

There is a bonus in your river-crossing challenge. A lady frog is languishing on one of the logs – and you get extra points from rescuing the damsel in distress and taking her home to your lily pad.

HOW TO WIN

The trick in this BBC version of the popular video game is to get an idea of the response time of your keys. Once you know how quickly the frog is going to move after you press the key (hint: it's slower than you think), you will be in a good position to get through the traffic section.

Once you get to the other side of the road, you will be relatively safe for a few moments – providing you keep a sharp eye out for the snake that patrols that side of the road.

Next comes the challenge of the logs. You will notice there are three rows of logs moving parallel to one another. The first row moves from right to left, the second from left to right and the third from right to left again.

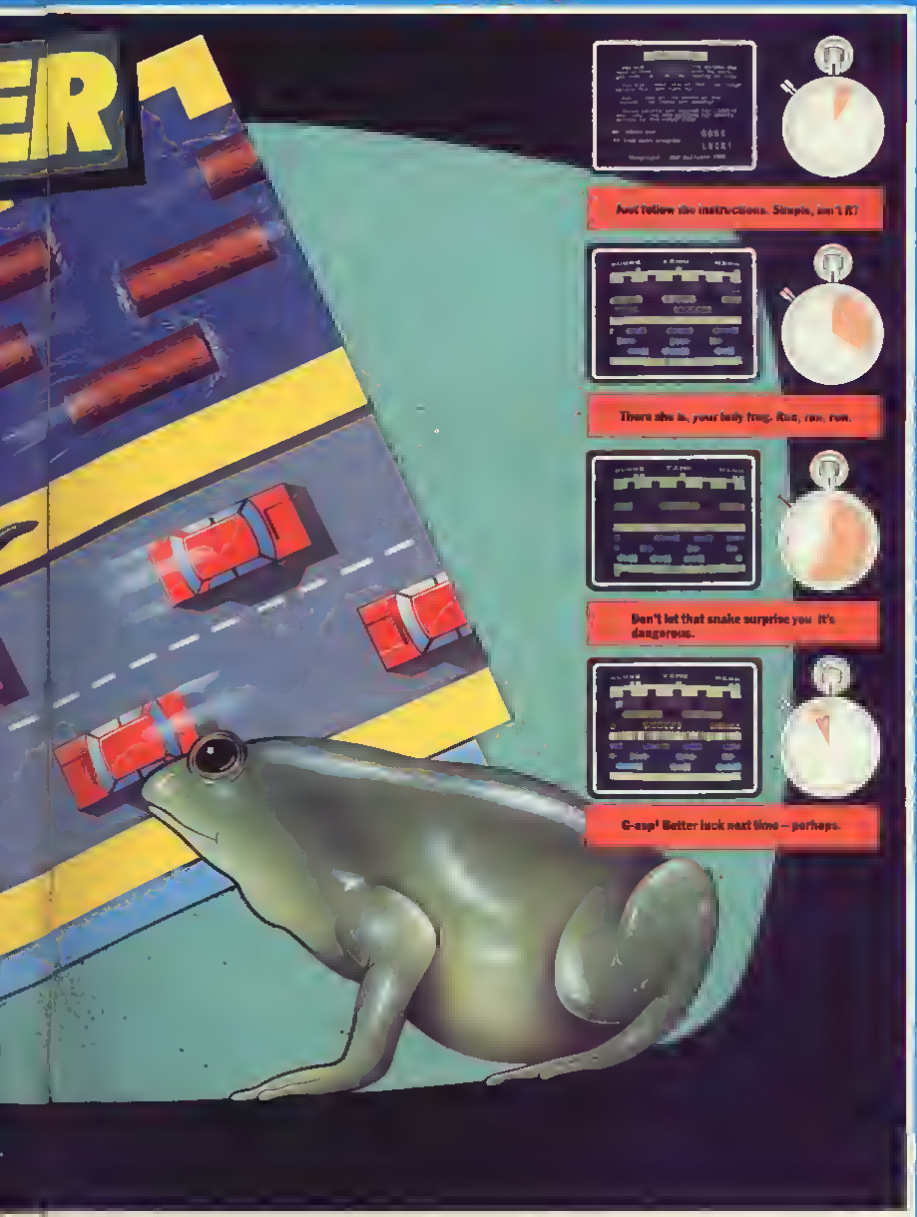
If you miss the lady frog the first time it comes round, you can hop back and forth between the logs until you do. Don't let yourself hit the right or left of the screen, where you'll meet an untimely end.

When you are near the other side, you must look closely to make sure there are no crocodiles lurking near your lily pad. If you are successful, there will be a little fanfare.

VIEW VERDICT

This is a good implementation of the classic amphibian video game. The controls could perhaps be more responsive than they were. But a little time spent getting the feel of the keys should solve the problem.

Price: £8.00 **Media:** cassette
Distributors: A & F Software, 539 Hyde Road, Gorton, Manchester, M18 7JD, and most BBC micro dealers that stock A & F programs. **Requirements:** standard BBC micro and cassette recorder
Language: machine code


Just follow the instructions. Simple, isn't it?
There she is, your lady frog. Run, run, run.
Don't let that snake surprise you it's dangerous.
G-asp! Better luck next time – perhaps.

CHALLENGE

Flying the balloon in Pulsar Software's Up, Up and Away for the Atari computer would be easy—if there weren't kids with slingshots, lightning bolts from foreboding black clouds, windmills, kites and small planes all trying to pull you out of the sky.

So the main challenge is simply a matter of staying alive. If your balloon is hit by something, or runs out of fuel, it will deflate and plummet like a stone.

HOW TO WIN

Keep your eyes open and your hands tightly on the joystick. You will have to be careful from the moment you take off.

The first danger you are likely to face is the kid with the slingshot. For some reason, that kid feels the need to sling arrows at your innocent little balloon (the rotter). You can move quickly, by thrusting the joystick hard to the right, and try to avoid the shot. Alternatively, you can manoeuvre round it once the shot has been taken.

If you manage to make it past the kid, you will have either a storm or a crazy aerobatic pilot to face. The pilot seems to move completely at random. He is happy to hit your balloon with his propellor and cause your eventual downfall. As for the storm, unless you are careful a bolt of lightning will strike you with a crack of thunder.

Avoiding the previous slings and arrows was relatively simple. You will have to keep practising your manoeuvres to avoid the plane. The storm clouds are best survived by moving quickly into the spot between two clouds.

At the lower skill levels, the windmill should not pose too much of a hazard. Later, it can take considerable dexterity to survive. The trick here is to be travelling high enough and fast enough so that you don't get sucked down to the ground by the force of the suction generated by the windmill.

The kite is perhaps the trickiest challenge for beginners, but actually one of the easiest to figure out. You must restrain yourself from flying past the kite until its owner moves the kite to the right.

VIDEO VERDICT

A nice simple game without too much violence. Something to quietly get frustrated with when you have had it up to your eyeballs with the Star Raiders, Space Invaders and Pacmen.

Price: £21.95 from Pulsar Software
Requirements: standard Atari 800/400 **Media:** cassette or disk
Language: machine code.



ND AWAY



Flying high – but beware that kid and the deadly kite

KAKTUS

CHALLENGE

This is Space Invaders with a difference. You are a gopher and hordes of insects are invading your space. They are threatening to destroy your very own Kaktus (sic) what you planted with your own two paws.

These aren't just any old desert insects. The bugs in Kaktus (note the mild pun here and feel free to laugh any time) release acid drops. These will kill you if you get hit by them, and will destroy the cactus if you are not careful.

Since your very *raison d'etre* is to protect the poor embattled cactus, it is not surprising that you should put your life on the line to save it. To ward off the pesky insect invaders, you must shoot through the hole at the top of your burrow and kill them. Your exact weapon is not clear – and gophers are not generally noted for their marksmanship.

If the bugs do manage to break through the ground above your head you can shoot them through that break in the ground.

HOW TO WIN

If you know how to win at Space Invaders, figuring out Kaktus should be no great problem. Like the shields in Space Invaders, the ground above your head can serve as an alternative place to fire through. It can also serve as a protection from the bugs blasting down on you.

You can move out of the hole and face the bugs from above ground. But unless you are highly dexterous in keeping away from the bugs, this is sheer video suicide.

If you stay above ground for too long, you run the chance of having a mole cover your hole over with dirt, trapping you in the land of the small stinging beasts. So the best strategy remains shooting from below the hole. Take advantage of any holes that are blown in the ground by using them as portals through which to blast the acid-dropping critters.

You get three lives. So you can afford to take a few chances on the first one, and perhaps pop up to the ground to rack up a few points. Then become more conservative in your play with the other two lives.

VIDEO VERDICT

A nice variation on the theme. The concept of acid-dropping insects, armed gophers and marauding moles must be ranked among the more inventive introduced for games on the Vic 20. You will need an expanded Vic to run the game – at least 8K. It will support a joystick.

Price: £7.95 **Media:** cassette
Distributors: Audiogenic.
Requirements: expanded Vic (8K).
Language: machine code



Patience is a virtue when loading cassette-based programs

...but the screen jumps to life as you battle the bugs.

Watch that move! You won't get a second chance.

Too late. The kaktus will soon lose its sole defender.

FLIGHT

CHALLENGE

Flying is never an easy business. And the good folks at Oric have not designed to make it easier with their new Oric Hight program

You are the pilot. You control the plane. And you are responsible when it crashes – oops, I mean when it lands safely

The Oric flight manual is a rather thin document – three pages in all. But it gives you all you need to know about the art of flying.

Think you can do it? Wait. 'Below the main screen the various instruments are provided in an easy-to-read digital form,' the manual explains. 'The artificial horizon is shown as an artificial horizon display if you are currently banking the aircraft in order to turn around. As it represents the actual visible horizon, it slants in the opposite direction to your banking.'

Well, now that we've all read out flight manuals and looked up all the tough words in our pilot's glossaries it's time to hit the skies

HOW TO WIN

Your best friend in this game is your instrumentation, and Oric Flight's instruments are relatively non-standard issue. That doesn't mean you have a non-standard friend. Ordinary aircraft gauges and dials can be quite confusing and Tansoft's decision to represent them as digital readouts makes flying that much easier

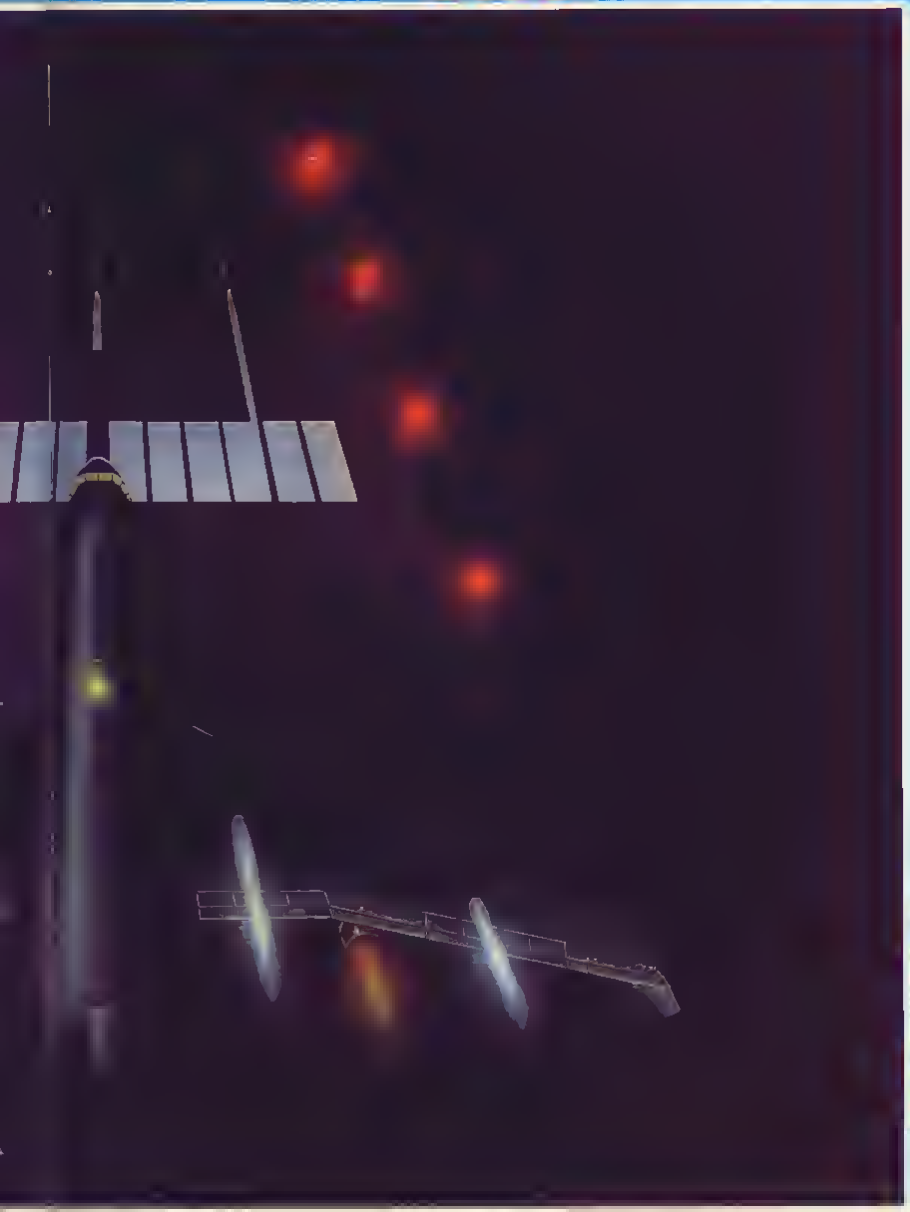
Start by getting your bearings. They are given as a number in the bearing readout at the bottom left-hand corner of the screen. North is 0 degrees, East 90 degrees, South 180 degrees, West 270 degrees. You must land exactly in an East-West direction.

The usual flying rules apply, as well. Keep your nose and throttle high during take-off, but bring back both once you have finished your climb. The ascent and descent rates are given in feet per second. When ascending, keep an eye on your fuel as you can fly only a certain time before you need to refuel. And running out of petrol at 30,000 feet is never fun

VIDEO VERDICT

A good flight simulator for the Walter Mitty jet pilot set. Perhaps not as realistic as some, but the 3D action replay of your crash at the end of the game is enough to unnerve and challenge even the bravest of pilots. Entrance fees to the PCG Oric flying school are surprisingly reasonable

Price: £21.95 from Tansoft Software **Requirement:** 48K Oric-1 **Media:** cassette **Language:** Basic/machine code



HUNGRY



CHALLENGE

In Hungry Horace, the first of our blue friend's adventures, Horace wants nothing more than a little food to see him through his stroll in what seems to be a rather large park.

Unfortunately, there are few concession stands and food outlets in the park – most people seem content to bring their own lunches. Horace has absent-mindedly forgotten to make one of his own. So he decides to steal other people's lunches. It's your job to help him.

Horace's efforts to cadge cuisine are opposed by the park's guards who pursue him from the moment the game starts. His only defence is to ring the park alarm bells that send the guards scurrying in every direction looking for the cause of the trouble.

In Horace Goes Skiing, our intrepid hero wants merely to make his way across the road to rent skis and then move on to the slopes. He wants to show off his schussing to all the young Horacettes sunning themselves in the cool video slopes of Mount Spectrum.

In Horace and the Spiders, Horace laughs in the face of adversity as he survives – we hope – the dangers of bridge and mountain to battle a pack of deadly spiders.

For Horace novices, we will personally tackle our friend's first adventure: his food-snatching farce in Hungry Horace

HOW TO WIN

Very carefully ... There are a few dead ends in Hungry Horace mazes. You will find Horace trapped and ready for easy capture by the park's guards if you lead him into one of those dead ends.

You must make sure Horace is never farther away from an alarm bell or exit than the guard chasing him. Make sure also that you don't get mixed up as to which button is moving Horace to which place. In moments of panic you may be likely to send poor old Horace into the waiting arms of a park guard.

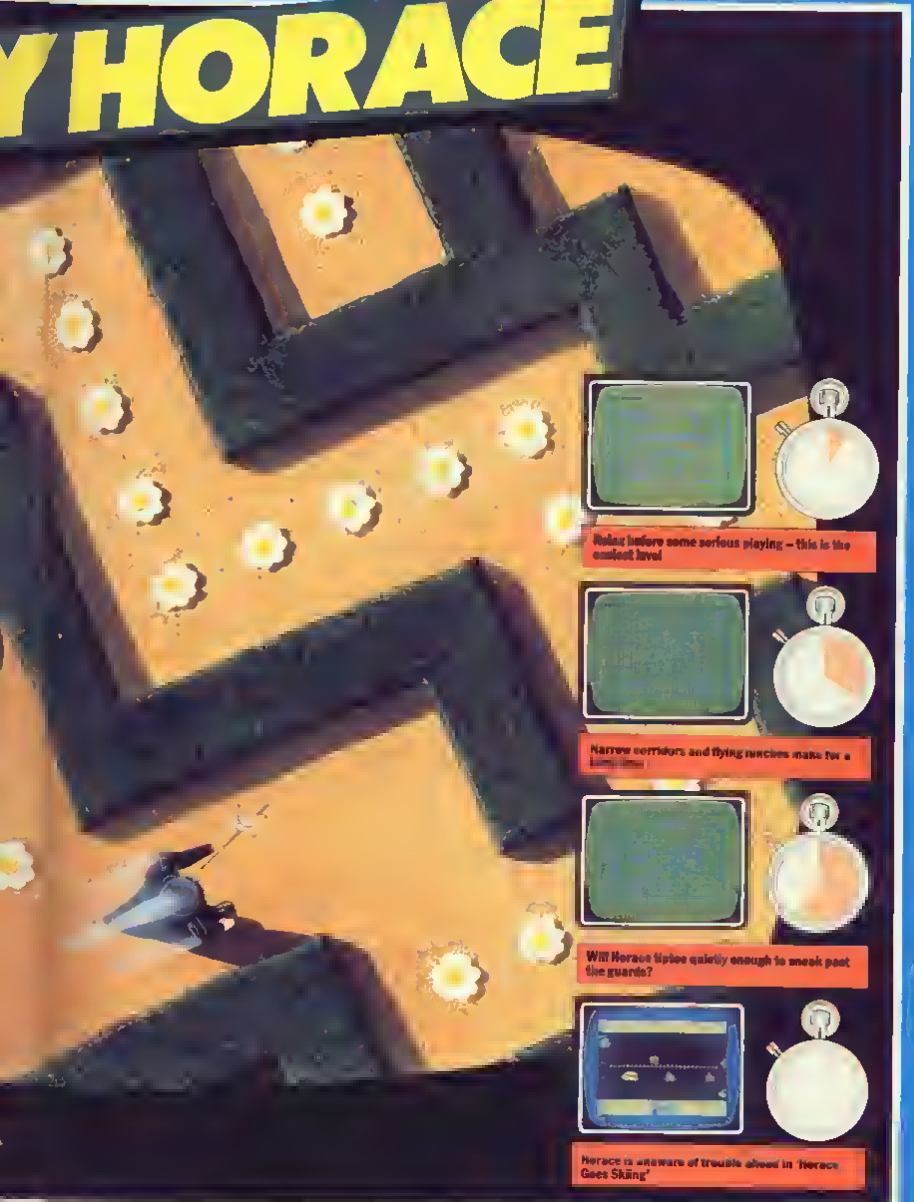
The best advice is simple observation. You will soon find that some patterns work better than others in moving you through various mazes.

VIDEO VERDICT

A Spectrum classic. It's a pretty safe bet that the spiders will regret the day they met Horace and we will soon see the lovable blue blob's next episode.

Price: £5.95 **Media:** cassette
Distributors: WH Smith and Sinclair dealers **Requirements:** 16K Spectrum.
Language: assembler

Y HORACE



Relax before some serious playing – this is the easiest level

Narrow corridors and flying ravens make for a

Will Horace tiptoe quietly enough to sneak past the guards?

Horace is unaware of trouble ahead in 'Horace Goes Skiing'

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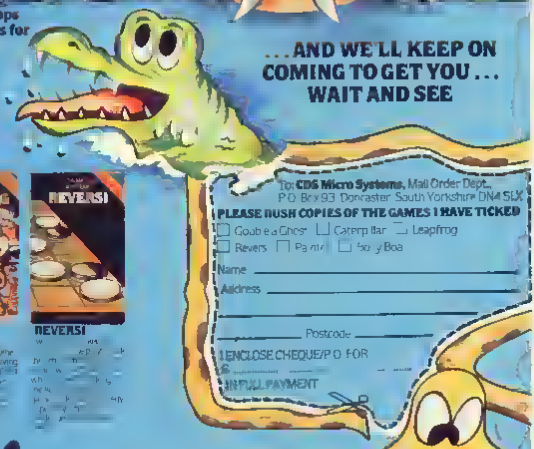
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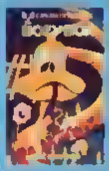
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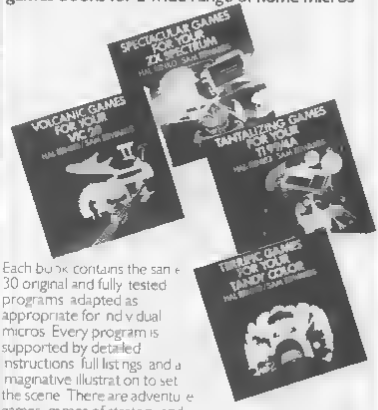
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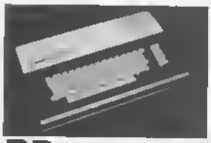
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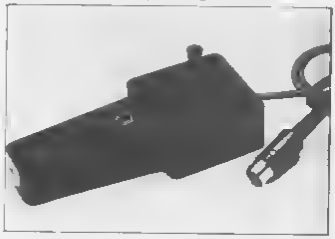
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GAMES

GAME Backgammon
MACHINE ATOM



ATOM BACK-GAMMON

BY PETER ROBINSON

Backgammon players should appreciate this game It s nicely crash proofed and makes good use of the Atom s high resolution graphics

It is assumed that the user knows how to play backgammon So if you don t know how to play you will need a set of rules

It requires the full memory expansion on the Atom – I2K RAM All play is against the computer which moves the black pieces You are allowed to go first but if you d rather give your micro a chance press the zero key when the prompt of 'your turn appears on the screen Pressing this key at any other time when it is your turn lets the computer know you can't move

To move, you use numbers in accordance with a pair of white dice displayed on the screen Illegal moves are indicated by a tone from the speaker You have to position the cursor (which appears under the bottom right triangle) under the piece you want to move using the '[' and '] keys You then press the number key corresponding to the dice value you wish to move This moves the piece the required number of points

If one of your pieces is hit it will appear on the bar You will be unable to move the cursor until all your pieces have been moved from there You can remove your pieces simply by pressing the key with the required number on it. Bearing-off is performed in the same manner as for any other move except that the piece is actually moved off the board

Our thanks to the Anglia Computer Centre for this listing

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GAMES

GAME Book common MACHINE ATOM

```
5A0 IF@<>0 @@$<C/@@$>P
5A1 I?$=@ 3A*15 @W!I@+LFF0/10 @ L*@J@=@ /P!F0/10 @@$>@
5A2 P?@=P?@-10J@=@*@,PP@=PP@A!@ @@$ @ @@$ @=P@=E
5A5 IF@@!+@@2+@@3+@@A<>@ G P20
600 @.200

P*95 L
10E@ C?=PP9=@=@
501@ IPP<10 =*1
5011 @PP>@@=PA10
1020 X=(12-%)=@*@=14 Y 20 5 6 2 P <=P <416
1040 IPP>12 P=L3 131=@+@ P Y P1 2@ FD>1=X=X=16
5051 C=342 P
5060 @L=L192 Y)=52=P/@=Y =@=@PC=@ 1 )
5070 P P=1TE P)P < @T27
5080 ?LL+K=52)=L=(L=X=52)) (Y> A=2)) % L=L=S @ P
5100 @IPP=@ P
5110 L=(192-13+52=X/30= L=L LP 1)= 1 5 L C=6 2 )
5120 P K=3707 $(L=X=" )=(" L=X=323 Y LL+2)) % P
5200 =P.A=3AT@54 "@VE=@36 @=AAA 136 =@V=LA=101 66@@@P@(A=@@) 1 6
5210 @ @@=@@!=A A A=@1 W@2=A=@ 16"1 W@3=@ W@P=@ 1P@@2<>$W16 522
5215 @@I=@@1 W@P=@@!
1220 I=@ @@$ L(W@1=2@)+5210) I Pu @@1 L(J@2 201=@250) @@
5225 @P.A=!A$T@1AP "@VPA 36 PLU11 P 1 A =@V (P=P@)=@P
5250 PL=T1=(P=30) 106 %=-B@14P 2 %@=1 @@2=A P %@=1J@@5=@ @@4=
5251 IF@@1=@@2 @@5=@@2 P@A=@@2
52P@ I=112 @@$ LL@@1=2@)=>2701 I= 42 @@= (L@P2=201+X25@) P
1210 P=44 Y=15 @@$ P @
5270 I=39 Y=1JU@@1 P A=49 1=@1 @@$ P P
52V0 A=39 Y=101J@@$ $ X P@ Y=@1 @$ @ !=@PP Y=@@ @@$ P P
1310 P=19 @=101 @@1 P Y=21 @@$ @ Y =@ 35 $ 1=1@1 @@$ P P=
1110 A=39 T=101 @@= $ Y P1 @$ P K=A9 @@1 @ 1=1L1 @@$ P P=44
55P0 1=%_@@$ P P
5550 P A=$=1D=@% 10 P @=21101 16 ) @@= @ W @ P
5P@@ P# P@ 2T@2 P@2=P A M@VE(P=C=(1 LY=A) PL 16 LY=1 P)=L1=A)
1P10 %=@
@@@@ P P12 1PP=36 P @@
6@1@ P 1 =L=1=" "L=KPUT PS @E GM SUPPLPP ==
6020 @.@200
6100 P CDW=PAT LP1@W$ @@ P SKLLLTUL =1@"@
6200 P "PO 1CW WAN1 ABU1HEP GAM= L1NY=51 1PY7=@@=@P @UY
P=10 L
```


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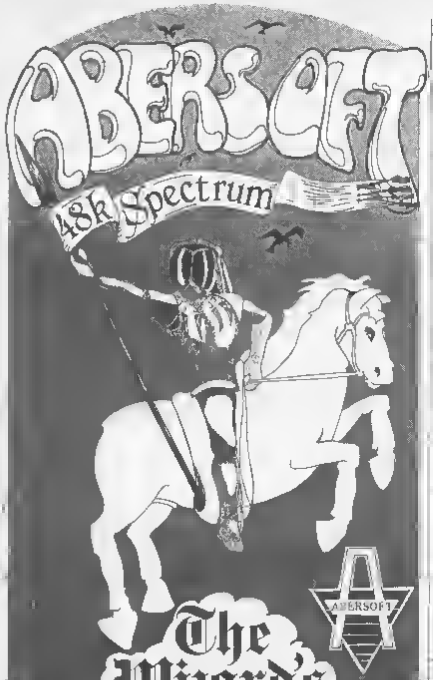
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HiSoft Pascal 4 is a very fast and powerful microcomputer Pascal compiler that is the result of three years development work. The compiler conforms very closely to Standard Pascal as described in the Pascal User Manual and Report (Jensen/Wirth) and produces Z80 object code directly in one pass; no P-codes to be subsequently interpreted. HP4 is also small (not more than 19K including runtime routines and tables) but this does not imply any lack of power – the compiler and runtimes were written in Z80 assembler language and a great deal of time was spent on increasing the speed and decreasing the size of the critical routines.

We have designed HP4 to be simple to use very fast, close to Standard Pascal (with extensions) and inexpensive. Thus we see it as being an attractive package in the educational field (for teaching yourself at home to teaching students at university level) and in the area of systems development. To this end HiSoft Pascal 4 is available in both cassette tape and diskette versions for a wide range of Z80 machines. The tape and disk versions are virtually identical except that the cassette version does not support FILEs, instead the user is given the ability to store and retrieve any variable to and from tape. The tape version (HP4TI) is organised in a manner that makes it very easy to adapt to most Z80 systems and we supply details on how to do this in our HP4T Alteration Guide available separately.

We have also written a Z80 development package which includes a fast and powerful conditional assembler, a labelling disassembler, a debugger with single-step facility and (on diskette) an extended screen editor. DEVPAC is available in a limited number of formats at the present and we are working to increase these.

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GAME Blaster
MACHINE SPECTRUM

SPECTRUM BLASTER

BY ALAN GREEN

Well, yes, it is another space invader type game but it has redeeming features. It demonstrates many of the special features of the Spectrum, including colour (BRIGHT, FLASH, INVERSE etc), sound (OK, BLEEP) and user-defined graphics.

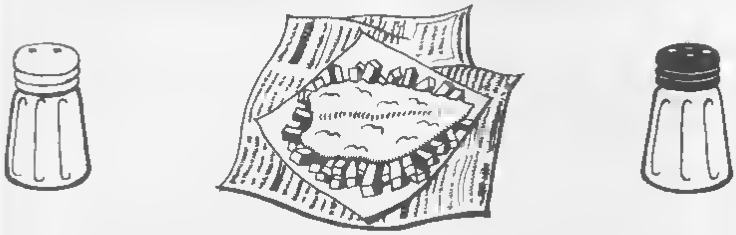
The program runs on both 16K and 48K machines and contains full instructions the usual 'blast the aliens before they kill your grandmother and eat your pet dog'.

Please note that the 'A', 'B' and 'C' in lines 40, 50, 60, 160 and 212 respectively should be entered as graphics A, B and C. Thanks to Neil Marshall for the modifications in lines 212 and 214.



*Insert line 35 LET SS=450

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GAMES

GAME Adventure in 1K

ADVENTURE IN 1K

BY IAN STANSFIELD

This is the ultimate transportable program. With an absolute minimum of adaptation (or none at all) it will run on any micro you might care to name, apart from those which don't support Basic – but there is only one of those at present. In fact, its transportability is quite sickening.

It is a whole adventure in well under 1K of memory. It will provide hours of fun and entertainment for all the family – as long as they are either schizoid or possessed of an IQ below 30. It is also very easy to understand and modify. Just key it in and RUN.

For the connoisseur, there is also a version written in C, for the sake of a little linguistic variety.

```
10 REM***1K ADVENTURE***
20 PRINT "YOU ARE IN A CAVERN"
30 PRINT "NORTH, SOUTH, EAST OR WEST?"
40 INPUT A$
50 GOTO 20

C VERSION

main()
{
char a[];
START
printf("You are in a cavern\n");
scanf("North,South,East or West",
a);getche();
goto START;
}
```


WESSEXSOFT 16 EASTLAKE AVE PARKSTONE POOLE DORSET

STAR TREK (Vic 20)
A 16K adventure type of program with instructions. Take charge of the Enterprise and go out into space in Search of the Klingons.

With full use made of the sound and colour on the Vic and updated information displayed on the screen all the time it becomes a game of intrigue and strategy to outwit your enemy.

Using your warp engines to move around the galaxy and its 64 quadrants to find the Klingons and starbases. Repair and re-fuel your ship. Load up with torpedoes and continue your search.

The 10 levels of play will enable the game to be played in varying degrees of difficulty giving you fewer starbases and more Klingons to destroy. The more damage you receive from the Klingons in combat the more difficult it becomes to defend yourself.

A game of skill and cunning at £9.50 including p/p.

STAR RUN (Vic 20) 16K
You are the pilot of the Interstellar XR6 loaded with vital equipment for the satellite planet Amethes 10 which is trying to fend off an invasion of aliens from penetrating the inner galactic empire. The satellite planet has developed a malfunction in its gyroplasmic stabilizers which is causing the planet to spin erratically.

The aliens will try to stop you reaching Amethes 10 but should you run the gauntlet safely then you must land in the docking bay without crashing. The controls are switched over to the cursor controls or joystick.

The XR6 has two laser cannons to help defend itself and in combat the XR6 may be damaged. There are bases along the way to re-fuel and repair.

Not an easy game to play.

There are 9 levels of play and if you found Star Trek easy then this one is for you. £9.50 including p/p.

ALARIANS REVENGE
A fast moving game of wizards and goblins based on a fable. Find the amulet and its stones and save the kingdom from monsters and the evil sorcerer. A very complex game of skill and the facility to save the game to tape has been included to enable the player to reload at any time and continue where they left off.

A 16K game using U D G full colour and sound. £9.50 including p/p.

SPRITEMASTER (CBM 64)
This program for the 64 will allow the creation of graphics on the screen. This is done one at a time so that they can be changed if desired. The colours can be arranged at the same time. The sprites can be moved around the screen using cursor controls. This helps to give some idea of what the finished creation will look like in certain positions on the screen. It also gives an idea of what the created character will look like in motion.

The sprites can be saved as data to some designated high line numbers and merged with your own program. The program can then be re-numbered to save memory. £6.50 including p/p.

SYNTHESISER (CBM 64)
A program to turn your 64 into a full synthesiser. The range includes three octaves on the first voice. Sustain, attack and decay are used to make the sound very real.

The waveforms can be changed in mid tune by the use of the function key. It is not even necessary to be able to read music but it helps. £4.50 including p/p.

GET YOUR CARDS RIGHT (16-48K Spectrum)
A card game based on the television series where the cards appear face down. The player must decide if the following cards are higher or lower. There is an amount of money to gamble. Wins are paid an getting all the cards right but bonuses are paid for pairs etc.

User defined characters have been used to add realism and the game is ideal for younger players (average age is 10 years). £4.00 including p/p.

PEG IN THE MIDDLE (14-16K Spectrum)
A game of solitaire with the option of horizontal/vertical moves or more pressing diagonal moves for the less experienced player. After 3 attempts to move a blind the player is asked if they want to see a solution.

All legal moves have been covered and it is not possible to cheat.

A game for all ages and not as easy to complete as you would think. £4.00 including p/p.

Peg in the Middle/Get Your Cards Right double package at £8.00 for the two.

GEM SOFTWARE

MONSTER MINE by W E MacGowan
Escape from the mine with as much money as you can but don t get shot in or caught by the prowling monsters A very addictive machine code game with superb graphics and high score tape save facility
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Enter the 3D Maze in search of the Sultan s jewels but beware your strength may run out or you may come face to face with the Mad Guardian s ghost A multi difficulty level game with fantastic graphics and sound
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LYNX COMPUTING by Ian Sinclair
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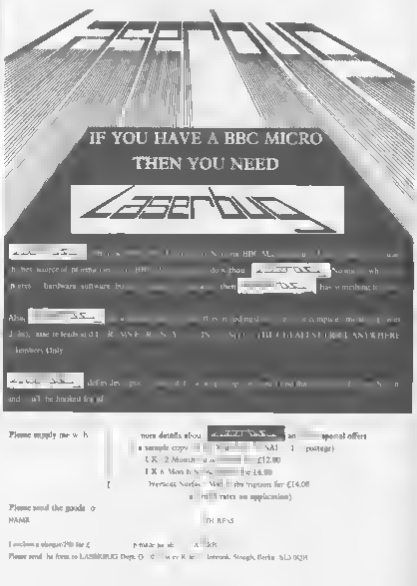
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GAME Engine Failure
MACHINE BBC



BBC ENGINE FAILURE

BY IAN WATT

This adventure game will run on either a model A or model B BBC computer

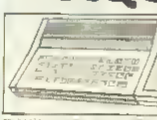
As adventures go, it is not stunningly unusual but it is fun to play As with all decent adventures, you need a modicum of patience – but that never did anyone any harm It has to be said that you can cheat by following the listing closely, but the penalty there lies with your own conscience

By way of an outline you are in a spaceship whose engines have failed while orbiting a planet. The fact that you are in orbit means that you are in danger of burning to a crisp in the planet s atmosphere in just a few minutes You are the hero/heroine whose job is to repair the ship and save the lives of all the grateful crew

You must move throughout the ship and on to the planet picking up objects (which may or may not be useful) as you go The computer is not above offering its help if you ask it nicely

HOME COMPUTERS

AQUARIUS



AQUARIUS The brand new Aquarius Personal Computer is part of Mattel Electronics latest developments in advanced technology and offers full home computer facilities as well as extensive game play using a very wide range of plug in cartridges. Since Aquarius is a Mattel Electronics product it benefits from the company's wide experience of producing high technology equipment, as well as their game programming expertise which is evident from the advanced games which have been produced for the Intellivision. Aquarius costs £79 and comes with membership of basic built in. It is so simple to use that you will be writing your first programs within minutes of taking the machine out of the box. You can even record the programs on your own cassette recorder at home so you can use them again at a later date. Most available domestic tape recorders are compatible with Aquarius.

A POWERFUL MACHINE For all its simplicity, it is also very sophisticated. It has a Z80A processor and 8K of built in ROM as well as 4K of RAM which is user expandable to 52K. It has a display of 40 x 24 characters, and a graphic resolution of 320 x 192 with a total character set of 256 (including the complete ASCII set with upper and lower case letters, numbers and additional graphic symbols). The keyboard has 49 full stroke moving keys unlike some of the cheaper machines which have membrane keyboards. The size of the machine (excluding any of the additional peripherals) is 13" x 8" x 2".

PERIPHERALS It is very easy to increase the capabilities of your Aquarius as all the peripherals plug straight into one another. You can add a Printer, a Modem, a Data Recorder, Mini Expander and other items. All of the peripherals are very easy to install and what is more, they're easy to use. But the best news of all is they're easy to afford.

CPM OPERATING CAPABILITY The Aquarius is capable of being expanded to 52K RAM and late in 1983 a disk drive will be available for it with the commercial CPM business operating system. This will allow you access to one of the largest software libraries in the World with literally thousands of programs available for use.

CARTRIDGES Various sophisticated programs will be launched on plug in cartridges such as a Visicalc type spreadsheet and a word processor. In addition there will be dozens of games and utilities and also native languages such as Logo which combined with the built in microsoft basic gives an unbeatable combination of high quality programming and easy to use.

MATTEL AQUARIUS — £69.70 + VAT = £79

£79

ATARI 400/800



NEW LOW PRICES

ATARI SCHOOL With the Atari Personal Computers, you can play the ultimate in TV games, teach yourself new subjects or skills, balance budgets and even write your own computer programs in Basic.

SPECIFICATIONS Both the Atari 400 and 800 can display in up to 16 colours each with 16 intensities. They have four independent sound synthesizers for music, human/game sounds, giving four octaves with variable volume and tone control, on your TV's speaker. The display provides a high resolution graphics mode of 320 x 192, comprising 24 lines of 40 characters. Atari's exclusive 3 dimensional (3D) programming system is built in. The standard Atari 400 (£149) comes with 16K of RAM, and the expanded version with 48K (£199). The Atari 800 (£299) comes with 48K as standard. Both the 400 and 800 are now supplied with a FREE 8K Basic Programming Cartridge which includes the Basic Programming Cartridge as well as a 120 page Basic Reference Manual and the 184 page Self Teaching Manual by Bill Carris called Inside Atari Basic so you can begin programming straight away without buying any extras. Even a mains plug is supplied.

OVER 500 PROGRAMS AVAILABLE The Atari computers are supported by well over 500 programs available for your use, a larger selection than you will find on any other television game or home computer! This wide selection puts Atari way ahead of the competition. Just fill in the coupon and we will be pleased to send you a full price list which gives details of our range of software available for entertainment, home education programming and home office use. We think you'll agree when we say it's quite impressive.

100 FREE PROGRAMS FROM SILICA SHOP If you buy your Atari Home Computer from Silica Shop, you will receive a FREE entertainment pack of 8 cassettes containing 100 programs including games utilities and demonstrations. A 16 page booklet giving full details of all of these programs is available on request. If you have already purchased your computer elsewhere you can buy the set of 8 cassettes for £20. What's more, Silica Shop offer a two year guarantee on all computers as well as a FREE joystick. The aids up to a great offer that we believe can be beaten or matched by any of our competitors.

ATARI 400 16K — £129.57 + VAT = £149
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ATARI 800 48K — £260.00 + VAT = £299

£149

VIDEO GAMES

COLECOVISION



THE SYSTEM The CBS Colecovision offers new standards in video game play. The excellent graphics are well implemented with arcade titles such as Zaxxon, Lady Bug, Gulf Wizard of War, Carnival, Mouse Trap and the lovable Smurfs. The console comes supplied with a three screen arcade quality version of DONKEY KONG. Perker and other companies have also announced ranges of cartridges for Colecovision to further enhance the wide range of quality titles available for the new television games machine.

THE CONSOLE The CBS Colecovision video games system has advanced technology which produces super-active sprites, precision and excellent sound effects. The styling of the console and hand controllers has been carefully researched: the console is designed to complement modern hi tech entertainment and has clear features to aid ease of use. The hand controllers allow fingertip control via the 8 direction joystick and feature 2 independent fire buttons. The push button keyboard is used for game select on and for game control with some cartridges. The hand controllers are detachable and can be connected to the rear of telephone cord units storing neatly away in the console when not in use.

ATARI EXPANSION MODULE The Atari converter module allows Atari VCS software cartridges to be played on the Colecovision console allowing owners this freedom to purchase from the extensive range of Atari compatible cartridges. It also means that existing Atari owners can now use the CBS Colecovision console to add considerably to their software library. Silica Shop offer part exchange facilities if you wish to upgrade.

TURBO EXPANSION MODULE The Turbo Driver Expansion Module allows you to actually drive the vehicle that appears on your TV screen. The module consists of a steering wheel, dashboard and accelerator pedal. One hand controller is mounted on the dashboard to provide a gear change unit. The module comes complete with a Turbo Driver cartridge, the first of several cartridges to make use of the module, which provides all the action of sitting in the driving seat. This facility is unique to CBS Colecovision.

HOME COMPUTER EXPANSION MODULE The Home Computer Module scheduled for late 1983 allows conversion of the games unit into a sophisticated Home Computer. The finishing touch is design: it can imprint feature of the CBS Colecovision System.

COLECOVISION - £127.82 + VAT = £147

£147

VECTREX



THE SYSTEM Vectrex is a revolutionary unique Home Arcade System which has been exclusively designed and engineered to duplicate real arcade game play. Complete with its own monitor display, Vectrex won't cause any arguments over the use of the family's television because it has its own built in screen.

THE SCREEN Vectrex does not use ordinary display techniques instead it uses vector scanning to control the images on the screen. With the scanning method, the gun only scans the area of the screen that has changed, whereas a normal TV rig transmits the ENTIRE screen 60 times a minute. It is this that gives Vectrex its speed, and means that very little computer power is required for screen control and the results provide very fast responding and clear images. Those 'Vector Graphics' are used in several arcade games such as Asteroids and Armour Attack etc. to give you incredibly high resolution and quality. Vectrex brings all of this from the arcade right into your home room. The Vectrex screen is capable of displaying 30 columns by 40 lines which is right from to the extensive detailed images scanned for the system.

EXCITING SOUNDS AND ELECTRONICS Vectrex has an advanced microprocessor with more speed and power and exciting effects than many home video games systems.

REAL ARCADE CONTROLS Vectrex has a unique control panel similar to those used in many real arcade games, with 4 concave action buttons and a full 360° self centering joystick. The control panel has a 4 foot detachable cord for maximum player freedom.

REAL ARCADE GRAPHICS Vectrex has its own 8 inch vertical screen and unlike a conventional TV screen uses advanced display technology to produce brilliant, high resolution imagery and superb game play never before possible. The Vectrex display provides special effects only such as 3 D rotation and zooming in and out which a regular TV cannot match. Using a black and white monitor, each Vectrex game comes supplied with its own coloured plastic screen overlay to add to the excitement of game play. The range of Vectrex cartridges (£21.95 each), give a good selection of arcade games such as Berzerk, Scramble, Pop Off and Bomber Attack. Vectrex comes complete with a fast paced 'Minestorm' game built into memory.

VECTREX Vectrex has an advanced state-of-the-art microprocessor with more speed than other TV games.

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VIDEO GAMES



ATARI

ATARI VCS (2600) – THE NO 1 BRAND LEADER IN THE U.K.

ATARI. The Atari Video Computer System known as the Atari VCS or the 2600 has now become the T.V. game brand leader in the U.K. there are over 700,000 owners of the VCS with access to a range of over 200 different plug in cartridges, each having a multitude of different variations and difficulty levels. Every system comes complete with the main console, two individual joystick controllers a pair of paddle controllers, serial cable, mains adaptor and a 27 game Combat cart. Use it gives you bright crisp graphics, realistic sound effects and own specially designed circuits for the processor of your Television Set.

SECONDHAND GAMES. We currently have several secondhand Atari VCS units in stock which we are selling for only £49 (inc VAT). This price includes the Console with Combat Cartridge and all the accessories as well as a 12 month guarantee.
We also have stocks of several secondhand cartridges many at half price as well as over 112 months guarantee! We will normally buy back secondhand units and cartridges at one third of our stansard price.

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EXTENSIVE CARTRIDGE RANGE. The Atari VCS is so popular that in addition to Atari's own cartridges there are over 150 compatible cartridges produced by at least a dozen different third party manufacturers. Silica Shop has one of the largest cartridge selections available in the U.K. Our range of over 200 titles (printed either side of this column). Included items in stock now as well as many of the new releases for later in 1983.

SILICA ATARI CLUB. Silica Shop has over 20,000 Atari VCS club members registered on our computer. As a specialist company we are able to obtain advance information about new releases and we publish catalogues to all of our club members enabling them to evaluate new products before they buy. This is a total y FREE service to receive your copies complete the coupon below.

SERVICE CENTRE. Atari International (UK) Inc has recently appointed Silica Shop as an authorised Atari Service Centre. This means that we can now service your Atari VCS or 400/800 (under guarantee if applicable) whether or not you purchased it from us.

VCS COMPUTER KEYBOARD. A keyboard will soon be launched to convert the VCS into a fully programmable home computer. For further details join our club by completing the coupon below. We will then let you know when further information is available.

STARPATH SUPERCHARGER. The supercharger plugs into the cartridge socket of your VCS and expands its RAM almost 60 fold from 128 to 5,272 bytes. This increased memory adds vivid high resolution graphics capabilities and significantly lengthens the game [illegible] game in several distinct parts (great for adventures) the next section being loaded when you have completed the previous one, thus enhancing the game play. For further information please complete the coupon below.

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We stock a wide range of accessories for the Atari VCS and 400/800 microcomputers. The same accessories can be used on the Commodore VIC range of computers. The Wico range can also be used with the Texas Instruments computers on switching a special adaptor. To give you an idea of the range available just take a look at the following list:



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WICO STRAIGHT STICK. The main feature of this joystick is its arcade style ball handle grip. It also has 2 fire buttons. Four grip pads included for table top use.

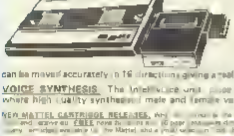
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Wico Straight Stick with Suck Fire Button

MATTEL INTELLIVISION



MATTEL INTELLIVISION. The Mattel games unit is a most versatile TV game which offers 5 C graphics quality for only £99. Each cartridge comes with 2 overlays which fit over the unique hand controller giving easy direction for game play. Using the handset's control pad objects can be moved accurately in 16 directions giving a realistic simulation of life like movement.

VOICE SYNTHESIS. The Intellivoice unit priced £49 is used with special cartridges where high quality synthesised male and female voices feature as part of the game play.

NEW MATTEL CARTRIDGE RELEASES. [illegible]

COMPUTER KEYBOARD. In July/August 1983 Mattel will be launching their new £88.48 key computer keyboard attachment called Lucky which is fully programmable and has microsoft basic built in. It will transform your Master Component into a home computer. The add-on also accepts a 6 note polyphonic music synthesiser and full size 49 key piano keyboard that will make learning music as easy as playing games.

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MATTEL CONSOLE £85.22 + VAT = £98.00

VIDEO GAME CLUB

In a fast moving market like video games it is difficult to keep up to date with all the developments that take place. With new programmes and accessories being introduced at a fast rate by several different manufacturers it is impossible to get all the information you require from each manufacturer alone. It is for this reason, that we have set up owners clubs for the more popular video games and home computers, to keep you fully up to date with what is going on with your particular machine. As far as we know, Silica Shop are the only company to offer such clubs, but that is not surprising since we are the ones that have currently have FREE clubs for the Atari VCS, Atari 400/800 home computers and Mattel Intellivision. From time to time we will have clubs for Colecovision, Aquarius and Vectrex. So if you own one of these machines, fill in the coupon opposite and we will enrol you FREE OF CHARGE in the club relevant to you, compatible video game

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Bob Maunder is co-author of 'The ZX80 Companion' and author of 'The ZX81 Companion'. He is a Senior Lecturer in Computer Science at Teesside Polytechnic, holds an MSc degree in Computer Science, and is a Member of the British Computer Society.

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GAME MACHINE Flashback Atari

```
  0 REM**FLASHBACK** by
  20 REM
  30 DIM XB(3),YB(3),LEN(3),N(3),COL(3),VAL(3),NUM(3),A(10),B(10)
  40 REM
  50 REM ***SET RAND VALUES***
  60 FOR J= 1% TO SYNCH  INTERVALOUR L=LUNNEXT JUSTOUR
  70 REM
  80 REM **TITTING UP MUSIC NOTES
  90 DIM J=1 TO 8:READ FL=FLEJ  FL=FLEN JUJUUA FL,FT,95 IZZ 199-
100,222,255
110 REM
120 REM **** TO SET UP PLAYERS
130 FOR J=1 TO 10:READ A$:A=VAL(A$):F = CHR$(A):NEXT JUZU : RE
TURN,ZU = CHR$(255):R= ZA(1F,16F = C4R$(F
140 DATA 100,100,222,200,100,222,200,169,0,170,0,245,200,200,
197,255,200,200,200,96
150 AS = B:ZB$ ** RESET HIGH SCORE
160 GOSUB 720
170 T = TT+200 + TT+3 :GOTO 60
180 REM
190 REM ** SET UP DISPLAY FOR GAME
200 GOSUBTTT FB:PCKT TT0,0: PRINT T11,15
210 REM
220 REM **NO TJU = NUMBERS TN BLACK NMEJA = NUMBERS TN WHITT
230 FOR J=T TO 8:XB(J)=140:J=XW(J)=200+J:NEXT J
240 REM
250 DIM A= TOSTTTIN NO NUMBERT ON SCORTH
260 S=PEEK(563)+2:ZT=PEEK(S)+1:B= T+PEEK(TT+250+PEEK(T+B
270 DIM J=1 TO B:XB(J)=T+6:IA=J: JI PEA:J(J)=TA(B):B=JB MEXB J
280 FOR J=T TO B:XB(J)=XB(J)-B:P(J)=NEXT J
290 RESTTON ;,HIS PEN "flashback"=B:SETTHN 2,70:T BB
*HTGHTCORE** IHS
300 REM
310 REM ** SOUND VLSUALIZNT
320 GOTO 7000:FOR=0 0:0:0:POKE STAT0,B:POKE ST761,TT0:
POKE ST7FT,T60:POKE TT760,25:POKE 5320,72T
720 REM
730 ** MOVING PRINTOT
740 FOR J=T TN BB MPOKE TT250+PEKEK I
750 POR J=T TO XT MPOKE ST250+PEKEK I
760 FOR J=T TO X2 MPOKE ST280+PEKEK I
770 FOR J=T TO XT MPOKE TT240+PEKEK I
780 FOUND W=8:W=MPOK T=70 TO 0 TTTP -PEKEKWB W=T+B:PRINTMENT I
800 GOSUB T363
900 R=T
910 REM
```

ATARI FLASHBACK

BY G CHEUNG

This game is rather like the well known Simon Says game It uses good colour and sound and provides a full range of difficulty levels

As it runs in under 16K it is ideal for either Atari 400 or 800 Depending on the level of difficulty, between four and eight numbers are displayed in coloured rectangles

These flash in a random sequence together with a sound of charactenstic pitch The player then has to follow the sequence by pressing the right numeric keys As the game goes on the sequences get longer A high score of number sequences remembered is kept

As a program it is nicely written and it uses machine code to speed up responses to input The flashing numbers are produced by POKEing directly into screen RAM

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Price: £14.50 including VAT and 50p postage and packing.

ZODIAC
A traditional adventure game in which the player has to find the 12 cunningly hidden signs of the Zodiac which lead him to greater treasures. The player manipulates objects through simple sentences which the program can understand and can ask for his score at any time. A save game feature is also included. Requires a 48k machine.
Price: £9.99 included VAT and 40p postage and packing.

ORIC-CHESS
Using high resolution graphics to display the chessboard this package will play a challenging game of chess with five levels of skill. The computer looks ahead for its own moves plus its opponent's. The skill level dictates how far the computer looks ahead although at the expense of more time. All chess rules including Castling and En Passant are catered. Requires a 48k machine.
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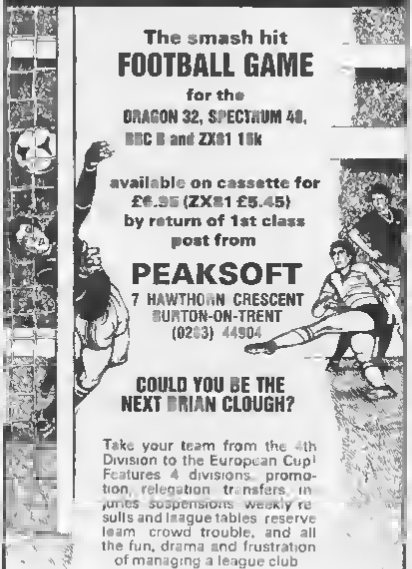
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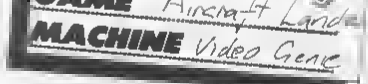
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GAMES

GAME Aircraft Land
MACHINE Video Genie



VIDEO GENIE AIRCRAFT LANDER

BY P BAILEY

Here's a realistic and challenging simulation for 16K Video Genie owners The idea is that you are piloting an aircraft down a runway, allowing for crosswinds The aim is of course to land safely

It can be a bit unnerving to play as the responses to your controls are intentionally delayed Small corrections or small cross winds can cause dramatic effects The instructions contained in the program are clear and well set out, but it may be worth making a separate note of these as they are rather a lot to remember in one go

You can select the strength of wind against which you wish to fly A zero cross-wind will make the landing easier as you will not have to use the 'roll' controls Apart from roll, you control pitch and throttle You can land safely only in certain control limits Once you have landed you have to straighten up the aircraft and apply the brakes – if you run out of runway you crash!



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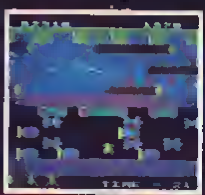




CENTIPEDE (32K) £7.95 Cassette

Parallels arcade type game featuring mushrooms, snails, flies, spiders and the centipedes of course. Excellent graphics and sound. 6 skill levels, hi-score, rankings-bonuses, and increasing difficulty as the spiders become more active and the number of mushrooms increases.

"Visually this game compares well with the arcade version, being colourful and clear."
YOUR COMPUTER



FROGGER (32K) £7.95 Cassette

Not just another version of froggar this is the proper high-quality version that you've been waiting for. Graphically brilliant, with gaping-mawthed crocodiles, diving turtles, and frogs that flex their legs as they jump along. Increasing difficulty, hi-score, responsive controls, sound effects, tiles and bonus frogs.

●●● *NEW RELEASE* ●●●



ROAD RUNNER (32K) £7.95 Cassette

The only full feature machine-code version of the arcade game available for the B.B.C micro. Features include: scrolling screen, radar display, checkpoint flags, fuel gauge, smoke screens, 6 skill levels, rankings, increasing difficulty, and sound effects.

Suitable for use with keyboard or joysticks.

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ALIEN DROPOUT (32K) £7.95 Cassette

Based upon the arcade game of ZYGON, but our version improves upon the original arcade game itself. You have to shoot the aliens out of their "boxes" before the "boxes" fill up. Once full, the aliens fly down relentlessly as blocking as they hit the ground. Suitable for use with keyboard or joysticks.

"Do not be fooled by their playful appearance — these mobs are out to get more than the clothes in your wardrobe."
YOUR COMPUTER



SPACE FIGHTER (32K) £7.95 Cassette

Arcade style game based upon features from DEFENDER and SCRAMBLE. 5 types of marauding alien fire at you and may attempt to ram you. Separate attack planes, fuel dumps, repeating laser cannons, asteroids, smart bombs, hi-score, rankings, 6 skill levels, sound effects.

"A thoroughly enjoyable program, well worth the money."
HOME COMPUTING WEEKLY



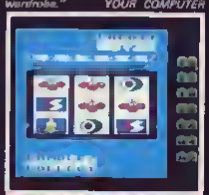
GALAXIANS (32K) £7.95 Cassette

Fast action version of the popular arcade game. 4 types of Galaxian fire 3 initial sixteen formations swoop down individually or in groups of two or three. 6 skill levels, high score, rankings, bonus laser based and increasing difficulty. Superb sound effects and graphics.



INVADERS (32K) £7.95 Cassette

Superb version of the old classic arcade game including a few extras. 4 marching invaders drop bombs that erode your defences, and two types of spaceship fly over releasing large bombs that penetrate through your defences. Increasing difficulty, high score, superb graphics and sound.



FRUIT MACHINE (32K) £7.95 Cassette

Probably the best fruit machine implementation on the market. This program has it all — HOLD, NUDGE, GAMBLE, spinning reels, realistic fruits and sound effects, multiple winning lines. This is THE fruit machine program to buy

"The graphics are very good and with a little imagination you might be able to convince yourself you are in Las Vegas."
YOUR COMPUTER

"Both . . . are well-produced, with colourful graphics, responsive controls and the usual bunch of extra-terrestrials." YOUR COMPUTER

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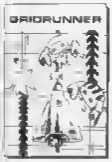
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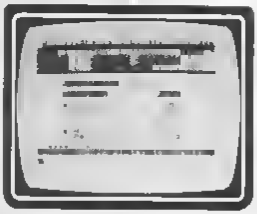
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SCREEN SCROLL

SPECTRUM · ZX81 · ORIC 1 · BBC

GAME: GREAT BRITAIN LIMITED (48K)
SUPPLIES: SIMON HESSEL SOFTWARE
PRICE: £5.95
MACHINE: SPECTRUM (VERSIONS ALSO AVAILABLE FOR ZX81 AND BBC)



I'm assured that the 16K ZX81 version of this is number 10 in the ZX software library. It's a colourful and sophisticated management game that gives you the chance to play at being prime minister of our sceptred isle. The idea is to stay in power for as long as possible. So you must end each five-year term in a popular state.

To start the game, you key in your name and then choose the party you represent — Labour, Conservative, Liberal or Social Democrat. This is not a decision to be taken lightly. I found that a Labour government always started on a much worse footing than the rest, particularly Tory. When the preliminaries have been completed you are presented with a run-down of the current state of affairs.

Simon Hessel does stress that this is a game and not a simulation. But plenty of variables are taken into consideration – inflation and unemployment being the key elements. Each year begins with these two factors being updated along with the exchange rate, your popularity rating and the balance of the national account. Their movement depends on your performance in the previous year. There are three ways in which you can control these figures.

First you must set the levels of income tax, corporation tax, VAT and excise duties on tobacco, alcohol and petrol. These will determine your total income at the end of the year. They will also affect unemployment, inflation and your popularity rating.

Next you must set the levels of social benefits, including child allowance, pensions and unemployment benefits. The populace are particularly sensitive to any of these, especially to pensions falling behind inflation. Finally, you are given the opportunity to plough money into some worthy cause in the hope that a social reform will be recognised. At the end of the year, news flashes will appear on the screen concerning riots or party revolts which may force you to revise your policies.

After five years an election takes place. You may be given the chance to outline your manifesto for the following term. This involves apportioning 1 000 points between four areas of social concern: inflation, unemployment, overseas aid and law and order. Then you sit and watch as the results clock up.

Dick Olney

GAME: STOCK EXCHANGE (16/48K)
SUPPLIES: ASL SOFTWARE
PRICE: £4.50
MACHINE: SINCLAIR



This game came to me on the other side of Dungeons of Intrigue, but is being sold as a separate piece of software with an 'Etch-a-Sketch' program on the other side. The same difficulties in loading were experienced as with Dungeons, but after changing some program lines I eventually got it up and running.

The aim of the game is to make a killing on the stock market. You start with £5 000 and have the option of buying or selling shares in a range of companies like Ewing Oil, Yorric Micros, Sinclair Toys, Borg Sports, ASL Software and Mothercare.

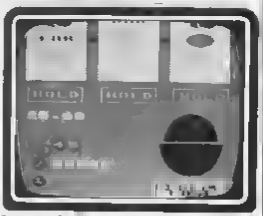
I started by sinking all my cash into Yorric and ASL – and 'sinking' is the right word because share prices in these companies promptly plummeted. I then spread what was left of my funds a bit more evenly, and gradually began to recoup my losses.

For each turn you have the option of buying, selling or leaving things as they are, shares held, market fluctuation and cash in hand are all updated automatically.

One thing that began to annoy me was the fact that fluctuation in share prices seemed to be much too random – it was very hard to discern any market trends. I enjoyed playing Stock Exchange but it didn't hold my attention for too long. It's the sort of game that is fun to play once or twice but I can't see it proving addictive. Any number from one to four can play.

Steve Mann

GAME: ASCARI ACTION
SUPPLIES: ACORNSOFT
PRICE: £11.90
MACHINE: BBC



I must admit I am generally suspicious of multi games packs, since they often disguise low quality. Perhaps surprisingly after the way it approached the Atom software, this is the only such package that Acornsoft is offering for the BBC micro. It contains a selection of old favourites including Invaders and Breakout.

Invaders is a one- or two-player game with nine skill levels. Each player may choose a different level of play, which is a novel feature even for stand alone Invaders. The game moves smoothly and quickly, with plenty of flying saucers and all the standard features. The invaders and saucers seem very large and are quite easy to hit at the start. But so is your base. They speed up quite dramatically when there are only a few left and the last remaining invader really does move like a rocket.

Breakout is also of good quality and is attractively colourful. As well as the standard game there are three options that features double bat, moving walls and captive balls. Any combination can be chosen giving a set of eight different games. As in many versions of Breakout, the bat moves quite slowly in normal mode. In this game, pressing the shift key gives double speed a feature that I liked.

The third game on the cassette is another early arcade original, Dodgem. You move a car through a maze of six concentric square tracks with four crossing points between them. A computer controlled car is travelling in the opposite direction and determined to get you. This ver-

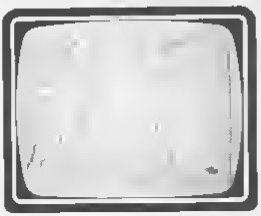
SCREEN SCROLL

BBC · VIC 20

93-w sion is completely standard, with the favoured 'Z', 'X' and '/' keys for movement and the space bar for acceleration

Finally, we have an interesting variation on the game where you must avoid crashing into your own tail, now immortalised in the film *Tron*. Snake is a one player game in which you guide a small white square around the screen attempting to eat 'food'. If you don't reach the food in time, it fades away. If you do eat it, your points are increased and the tail which follows the course of your dot grows a little. You end up with a long snake behind you. If at any point you guide the dot (now the head of the snake) into it or into the boundary lines a life is lost. Each game consists of three lives. Snake is an interesting and surprisingly addictive variant of a stunningly trivial game. **DO**

GAME: HARVESTER
SUPPLIER: PIXEL PRODUCTIONS
PRICE: £7.95
MACHINE: VIC-20



Strategy rather than zapping the enemy is the theme of Harvester. It is intriguing rather than exciting, depending on planning more than fast hand to eye coordination.

Up to four people can play, each driving a harvester which gobbles dots scattered about the screen.

When the game is RUN the screen fills up with coloured dots known as parcels of Boosterspice. The distinctive harvesters for each player are placed at random. To the right of the screen are simple direction codes: 1 for up, 5 for down, 8 for north east and so on. You make a move by typing in your personal code (A-D) and the direction code of your choice. You can take as much time as you like to make up your mind, and then use the Delete key to change it. Hitting RETURN makes the move.

The harvester trundles off, gobbling dots in your chosen direction as far as it can go, to a pleasant musical accompaniment. It stops when it hits the edge of the screen, meets another harvester or runs out of dots. Moving in a direction which is thus barred, without any dots left to gobble, ends the round.

The player's score is then reduced to zero and other players' scores are carried over the next round.

The strategy is to try to munch a line of dots in such a way that your opponent is isolated in as small an area as possible.

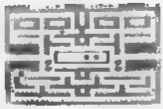
The graphics are simple but effective and include a rather powerful screen flash routine in the second half if you fail. The sound effects also work well. Harvester's biggest appeal is the fact that it is a game for the intellect rather than a sublimated desire to zap other entities. **Karl Dallas** -91

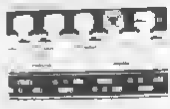
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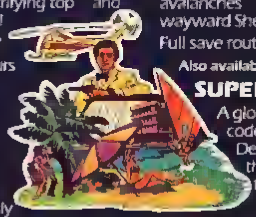
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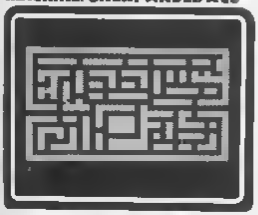
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GAME: MICRO MAZE
SUPPLIER: RI-TECH
PRICE: £6.95
MACHINE: UNEXPANDED ACE

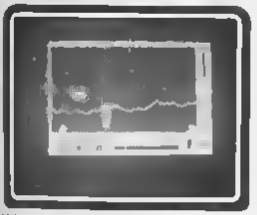


Again the instructions are confused between upper and lower case Once this is sorted out loading is straight forward

Micro Maze is a simple Pacman-style game You roam the maze, eating as many radioactive dots as you can, while keeping an eye open for the pursuing monsters If you manage to clear one maze of all the dots, the screen clears and you move onto a higher level – with the monsters getting quicker and much more likely to catch you That's all there is to it – there are four levels of skill and you automatically move onto the next level as you clear the screen You also have a choice of three mazes

I found this game surprisingly enjoyable Its best friends would hardly call it sophisticated and the graphics are somewhat on the simple side But it is surprisingly addictive and certainly worth a look if you own an unexpanded Jupiter Ace SM

GAME: LUNAR LEEPER
SUPPLIER: SIERRA VISION
PRICE: £19.95
MACHINE: APPLE II



What a relief to play a game get thrashed, collapse in heaps of laughter and then try again and again and again If you are like me you will laugh at the wrong times and forget what you are doing It gives the program an extra advantage as you laugh away another life

You are a spaceship above the moon, running out of fuel, and your shipmates are stranded on the surface All you have to do is pick them up – by the head Easy, you may think Well, it would be if only the Lunar Leepers with their voracious appetites would stop eating the castaways and spaceships

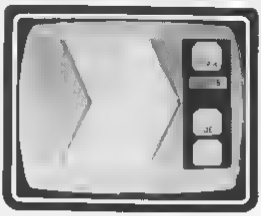
Once you have completed this task, stage two begins Your mission to boldly go where no spaceships should ever be and (fans of *The Perishers* cartoon strip will love this) shoot the eyeball in the sky As luck would have it, the eyeball is at the end of a cave defended by Trabants

The game is on one disk with accompanying fold-over instruction card The instructions are brief but accurate and the game allows a keyboard joystick or Atari joyport for controls If the keyboard is selected, the player is asked to define which keys are to be used during play Once into the game the graphics and sound are excellent

Starting at level one of eight the play is relatively easy as long as you suppress the odd chortle In fact it is worth making a few mistakes just to see the results As you move up through the levels more Leepers and spaceship like Trabants hinder your mission Eventually, Trabants become unkillable This may be unfair but it does increase the excitement

I so enjoyed this game that I assumed I was biased But I coerced a couple of non-game players to have a go Result? Addiction Nigel Cross

GAME: MOTOR MANIA
SUPPLIER: ADDICTIVE
PRICE: £6.95
MACHINE: COMMODORE 64



The Commodore 64 is very strong on sound high resolution graphics and colour It deserves to have programs which will exploit these qualities

Car-driving games are sufficiently testing to be a challenge while not being as frustrating as aircraft simulations Choosing one of nine levels of difficulty, you steer you car around a track which includes motorway sections ordinary roads and dirt track tests

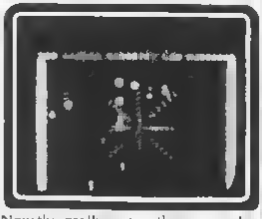
You will meet hazards – including slick patches and avalanches of boulders – on the way You have to pass other road users and the local ambulance crosses your path There are realistic engine noises as you drive and a constantly changing speedometer You also have to keep an eye on a gauge which tells you if you are driving too slowly to keep your battery charged and on a fuel gauge that warns you to call in at a garage before you run out of petrol

All this is complicated by hazards such as logs in the middle of the road – hitting one will cause your engine to overheat, signified by a flashing light followed by an oil warning light If you fail to get to a garage in time your engine dies And there are potholes to make your steering go haywire

Each map section completed earns an extra 1 000 miles If you clock up 5,000 miles you get an extra car to add to the five you start with If you still have four cars in the garage at this time, you score a massive 10 000 miles

Motor Mania is a first-class arcade game of absorbing interest, and requiring considerable skill It is a pity that it comes on cassette, even if a cartridge would be more expensive This is because this is a game likely to be in great demand in the home, and waiting for the cassette to load will prove frustrating Barry Miles

GAME: ARCADIA
SUPPLIER: IMAGINE
PRICE: £5.95
MACHINE: SPECTRUM



Now this really is something special The bright young things at Imagine have confidently pledged themselves to the production of totally original arcade-style software for a variety of home machines – no Pacman rip-offs here

First impressions of Arcadia are of a high degree of professionalism The colourful cassette insert credits the game and graphics designers, take a

SCREEN SCROLL

SPECTRUM · BBC

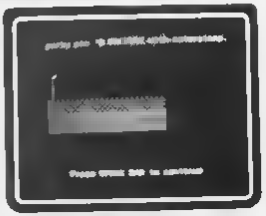
bow, D Lawson and M Butler Arcadia also offers a lifetime guarantee If one of their games fails to load it will be replaced at once, free of charge This is certainly a step to be encouraged Instructions for setting up are clear and concise, and there's a touch of sly humour in that the alien beasties you are battling against belong to the Atari-an Empire Of course, it could just be coincidence

The object of the game is fairly standard zap-the alien stuff The alien fleets attack in waves, and there is a timer at the top of the screen If you manage to destroy a whole fleet before the timer reaches zero, another replaces it. Conversely if the fleet fails to destroy your ship (the Arcadia) in this time limit it will break off the attack and home a new wave

There is a wide choice of control keys, so it is easy to configure the keyboard to suit your particular finger span There is also a 'freeze facility any key on the top row halts execution enabling you to take a break

Arcadia is very deceptive in the early stages Playing the game for the first time it is highly unlikely you'll get past the initial stage of fairly ordinary looking alien ships But as you improve you can appreciate the truly stunning graphics There are 12 different waves of attackers mutant butterflies, birds spinning circles, octopus-type shapes, even a mini-Centipede game If you manage to get through four levels intact you get an extra ship (you start with five) I am told that there is someone out there who has reached the 53rd level, a claim I find hard to believe as the Atarian Empire is no soft touch

This cassette really does show that, given sufficient imagination, Spectrum graphics can match up to almost any other machine around SM



RAM: PRILOSOPHER'S QUEST
SUPPLIER: ACORNSOFT
PRICE: £9.99
MACHINE: BBC

This is one of a pair of adventures which Acornsoft has included in its range of BBC software The other one is called Sphinx Adventure I suspect it is the easier of the two, although I haven't yet seen it Philosopher's Quest is an interesting and complex adventure with a fairly standard vocabulary

The Ancient Mariner and his albatross make an early appearance And in one room you apparently cease to exist! The text is varied but without the humour of some adventures It has the advantage of not repeating the full description of a room every time

This game is one which would appeal only to the most patient adventurer, and could provide months of mental turmoil even for the most experienced As you might have guessed, I hadn't got very far by the time this review was completed, but I have'n't given up yet' DO

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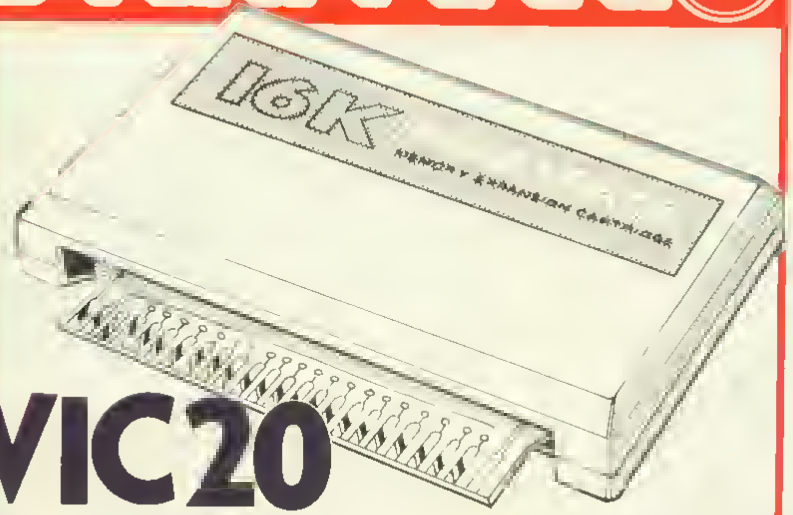
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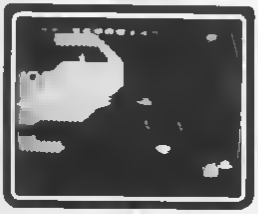
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ATARI · IBM PC · APPLE II

NAME: EARTERN FRONT
SUPPLIER: ATARI PROGRAM EXCRANGE
PRICE: £23.99
MACHINE: ATARI



This is one of a large selection of packages distributed by Atari but written by non-Atari personnel Atari does apparently pay quite good royalties if the program sells and it's a good way of making available software which might otherwise never be published Eastern Front has achieved such success that creator Chris Crawford has been given a job with Atari's elite software team in California

The game is a one player simulation of the German invasion of Russia during World War II in which you have the job of controlling the German forces The playing field is a map of Western Russia covering three or four screens length in each direction Using a joystick you move a purple square around the map which scrolls over if you reach the edge of the screen

Russian military units are seen as red squares and German ones as white To identify any unit and its strength you must position your purple square over it and press the fire button on your joystick Each turn you may give up to eight orders to each German unit These amount to instructions for movement in a particular direction They are given by pressing the fire button whilst your square frame is in position over the appropriate unit and – keeping the button pressed – moving the joystick in the direction you wish the unit to move (not diagonally)

When you have completed your orders pressing the start button initiates the procedure which figures out their results A unit will not carry out all your orders exactly for a number of reasons Firstly, it may come into conflict with an enemy unit by trying to move into the other's space In this case, the result of the conflict will be determined by the fighting strength of each unit along with various random factors and one unit will be forced to withdraw Associated with this is the inability under certain conditions of, your unit to move through a Russian unit's zone of control

Secondly, a German unit cannot move into a space already occupied by a friendly force and will merely wait until the other has moved Finally the number of spaces which a unit can move each turn is limited by its own nature (infantry or tank regiment) the terrain it is crossing and the season of the year The game runs from 22 June 1941 to 29 March 1942 with each turn representing one week, the current date is displayed at the top of the screen

Your score appears in the bottom left hand corner and is reassessed each turn, the idea being to end the game with the highest score possible out of 255 Since this score fluctuates in both directions, there is no point in playing part of a game As there is no game save feature, you will have to leave your computer on or allocate several hours each time you boot up the disk

The graphics are the most obviously impressive feature with the colours changing according to the season There can be no doubt that this is a fine piece of programming **DO**

GAME: OLYSSES ANR THE GOLREN FLEECE
RUPPLIER: SIERRA ON-LINE
PRICE: £25.30
MACRINE: IRM PC
(VERSIONS ALRO AVAILARLE FOR APPLE ANR ATARI



You must become Ulysses says the manual 'Your task to find the Golden Fleece and return it to the King The perils are many your foes powerful But with courage logic intuition and luck you can survive and take with you the secrets of sorcerers Now sit back, close your eyes and I'll spin a spell to open time's portals '

The game is for one player and is set in a number of locations, including the King's town, a tavern a shop and Colossal Island Each location has its own picture which comes on the screen when you get there – in the time I was playing I found at least 20 In each of these places you will bump into people – guards sailors shop keepers – or stumble across objects to take on your quest

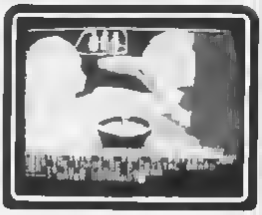
If you stumble across a mysterious floating bottle, for instance you just type GET BOTTLE The item is then added to your baggage and disappears from the picture

You start off in the town From there you can move north south east or west You may speak to anyone you meet to see whether they have any helpful information Robbers may steal some or all of your possessions You may be able to buy something – or you may find that what you thought was money isn't legal tender here

The instruction book does not tell you much about what you can or cannot do Part of the fun is finding out for yourself and you will need to use your imagination to find the right commands The game certainly has a sense of humour When I was unable to get any sense from a guard, I typed in KILL GUARD The response was 'That wouldn't be nice Besides, he's bigger than you'

I was not particularly impressed with the graphics – I've seen better on micros such as the Apple or Atari But only a mad millionaire is going to buy an IBM PC for games This game and others like it, will be played by the boss in the evenings It could give a new meaning to 'working late at the office tonight dear' **Mike Whitney**

GAME: THE RARK CRYRTAL
SUPPLIER: RIERRA ON-LINE
PRICE: £
MACHINE: APPLE II



This is an adventure game in the great tradition You are Jen last of the Getfling race which was exterminated by the evil Skeksis They control the land with the aid of the powerful Dark Crystal damaged centuries ago when a shard broke off and was lost Now you must find the shard heal the crystal and defeat the Skeksis

Getting the game up and running

SCREEN SCROLL

APPLE II · ORIC 1

could not be simpler You gently shove the disk in the drive and boot The first picture on the screen shows Jen sitting on a rock playing his pipes From then on it's up to you

The game is sixth in the Sierra Online Hires Adventure series and uses the same code as the previous ones I found it more frustrating than its forerunners, and more arbitrary One classic example is the time I was spotted by a bat with a crystal eye It took only one bat sighting followed a few turns later by the appearance of one of the Garthim (invincible nasties) to hammer home the message that Bats Meanz Garthim. I got killed that time

After rebooting and retracing my steps from the map I had drawn so carefully, I was spotted by another bat. I was only two moves away from the hill where the Landstriders grazed, so I headed for it and arrived just in time Then up came a Garthim To my intense displeasure I discovered that being in the presence of Landstriders – who get their kicks in life by kicking the life out of Garthim – makes not one bit of difference You wind up just as dead

In an adventure game there are very few situations in which an operator error can cause a problem In the case of the Dark Crystal, the need to load each picture-file from disk means you could confuse disks causing a 'file not found' error The same problem could occur when you move from one disk to another In both cases the program explains what the machine thinks might be happening

It is best if you play this on a colour TV as it loses most of its appeal in mono However, since it is based on the American TV standard the colours are blurry **Richard King**

GAME: ZODIAC
SUPPLIER: TANSOFT
PRICE: £9.99
MACHINE: ORIC 1

Zodiac is a full-length adventure for the 48K Oric Using slow format the program loaded successfully, but took half an hour to do so

This features a very large vocabulary and uses the large memory to very good effect It's a standard text adventure You start in a small hut and wander through various locations retrieving treasure There are six valuable objects to be retrieved and it will take you a long time to complete the whole game – Tansoft reckons five hours for a seasoned adventurer and 50 or more for the novice

There is a good range of locations and plenty of detailed description If you find yourself in a room the Oric will tell you that it has high ceilings a sturdy mantelpiece and exquisite panelling which denotes that the house owner has good taste and high financial standing You are not restricted to simple verb/noun instructions You can add descriptive adjectives which will affect the way the computer carries out your orders

Music is added at relevant points of the adventure – at one location you come across a radio that is playing the theme tune from the Archers This detracted from my enjoyment as the sound did terrible things to the screen display I assume that production Orics are now free from this annoying feature

Sound bugs aside, this is a very nice piece of software I am not an adventur addict, but I think this is a game I would return to **SM**

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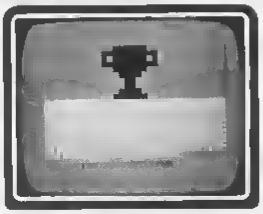
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SCREEN SCROLL

SPECTRUM · DRAGON 32 · ZX81 · BBC

GAME: FOOTBALL MANAGER
SUPPLIER: ADDICTIVE GAMES
PRICE: £5.95
MACHINE: SPECTRUM



When I first received this game I spent the best part of a weekend playing it Since then, I have returned to it more often than any other

The object ot the game is to pilot your chosen team from division four to the league championship, on the way winning the FA Cup as often as possible The game mirrors reality in that a good Cup run will give you greater attendances, hence more money at the gate Conversely, losing too many games cuts your income and can result in you getting the sack

You have a maximum of 16 players in your squad and can buy or sell as the situation dictates, borrowing from the bank as necessary You can change players' names to suit your own foibles and prejudices Unfortunately your players must have names of eight letters or less including initial so there s no room for Kenny Dalglish

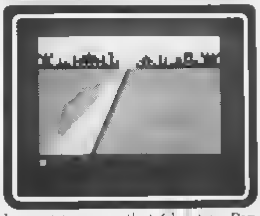
Loading Football Manager for the first time you are invited to enter your name and then choose a team from the 64 on offer No matter which team you choose, you start the game in division four – which must be particularly galling for Liverpool fans If your favourite team is not represented you can select any of the others and then change the name You select your skill level from a choice of seven ranging from beginner to genius You then choose your team's colours – this is not too realistic as you are restricted to black or white – and the game begins

The truly addictive quality of this game is the remarkable way it mirrors a real football manager's problems Each player in your squad is rated between 1 and 5 in skill Thus rating affects his price in the transfer market and his cost to you in wages In addition, each has an energy value of 20 or less Each game played reduces this value by one, while resting the player for one game boosts his energy by 10 Your team's performance will depend on values obtained from the skill and energy ratings of the players, plus a morale factor Lose games and this goes down, making you more likely to lose again This is identical to a real team s performance

So far the game is purely textual Now the fun begins Having selected the most suitable team for the forthcoming game (you have a dossier on your opponents skills morale and energy) you have to sit back biting your nails like any real manager while the game is played This is done in a series of goalmouth scrambles Successful shots are greeted by an electronic scoreboard flashing GOAL" and the match score is displayed

It should be stressed that this is not a short game – there are 15 games in a season, plus the various rounds in the FA Cup To get from division four to the league championship at any of the higher skill levels is going to take you a week of playing every day SM

GAME: PIMANIA
SUPPLIER: AUTOMATA SOFTWARE
PRICE: £1S
MACHINE: SPECTRUM
(OTHER VERSIONS AVAILABLE FOR DRAGON, ZX81 AND BBC)



I m not too sure that Christian Penfold and Mel Croucher should be allowed to walk the streets Both of them are obviously warped –

What we have here is a world where saxophones turn into hang-gliders, where red herrings swim across the bottom of the screen blowing bubbles of derision and where snatches of music confuse, hinder and occasionally help you Along the way you'll be greeted by a blatant appeal for cash – they promise to send you a T shirt, but what makes you think you can trust them? Throughout your adventures you'll be involved with the Pi Man who will give you presents of useful things like blackboards, then next minute rob you blind

It's a game that encourages all that is noble in the human spirit – namely naked ravening greed The prize is a specially designed £6 000 gold and diamond sundial Whoever wins it will certainly deserve it but will undoubtedly be a gibbering lunatic by then

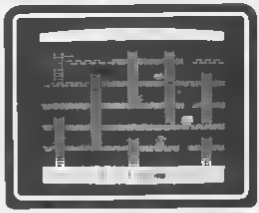
Seeing as there's so much at stake, I'm not going to tell you too much – why should I help you get rich? Suffice it to say that it's an adventure But the objects are not your run of-the mill swords magic rings and potions – you pick up TV dinners cans of worms, handfuls of valium

The object is to get through the Gate of Pi, which will reward you with a place name and date Turn up at the appointed time and an Automata person will hand over the goodies

There are potential clues in everything, probably even in the horrendous 'disco single on the other side of the program tape

The Pi-Man does a mean hokey cokey The animation makes nonsense of the fact that the Spectrum is a slow computer And the cassette case should carry a government health warning this game can damage your brain It would appear that Automata staff are not expecting an early winner – if no one shows up on the first date set they promise to return at the same time on the same day of every year until the prize is won SM

GAME: MONSTERS
SUPPLIER: ACORNSOFT
PRICE: £9.95
MACHINE: BBC



One of my arcade favourites is a game called Space Panic Monsters is an exact reproduction of the original right down to the sound effects

You control a neatly drawn little man who runs around five floors linked by various configurations of ladders while being chased by monsters As you might guess, the idea is to kill all the monsters as quickly as possible Instead of a weapon, the little man is equipped with a spade with which he can dig and fill in holes.

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Return to Earth Having escaped from your previous dilemmas you reach Earth Station 1 but fail to make radio contact. You effect a safe if hazardous docking. On entry you find it deserted and the control room destroyed. You must explore the station and find some way to alert Earth of your predicament but beware many of the rooms are identical there is extensive damage and signs of alien intruders.



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SCREEN SCROLL

BBC · VIC 20

104

So he must dig a hole wait until a monster falls into it, and then quickly fill the hole in before it can crawl back out. The unfortunate creature falls to the floor below and dies. The 'X' and 'Z' keys control horizontal movement, ' ' and / vertical, and 'D' and 'F' digging and filling.

In the first frame there are three red monsters which look like huge tomatoes. If you kill all the monsters, a little tune is played and a new frame appears. This time there are five red tomatoes. From the second frame onwards any monster who manages to climb out of a hole mutates into a more devastating form. A red one turns green, and a green one turns white. The green and white ones are different incidentally, and don't look at all like tomatoes.

Green monsters must fall through two vertically aligned holes, and whites through three. If any monster falls on top of another they are both destroyed. In addition to this, the green and white monsters are much smarter than the red ones and will follow you around relentlessly so that it is difficult to find time to dig any holes.

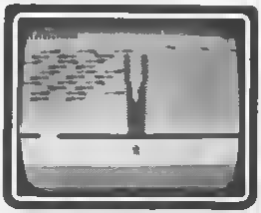
Your oxygen level is shown by a red and yellow bar at the bottom of the screen. This gets progressively shorter throughout the frame. When it reaches red the little man tires and eventually crashes to the floor and dies. This is not a real problem in the first few frames. Later on, when you may find yourself tackling several green and white monsters it becomes vital.

As have said, Acornsoft's Monsters is high quality. The responses, graphics and sound effects are impeccable, making for one of the best games around. **DO**

GAME: KAKTUS
SUPPLIER: AUDIOGENIC
PRICE: £7.95
MACHINE: VIC 20

The good news is that this is a good, challenging game that makes imaginative use of the Vic's graphics. The bad news is that you need at least an 8k expansion to run it.

A cactus in the centre of the screen is being eaten by wasps and hornets. You are a gopher who must scamper from left to right in a tunnel under the



cactus, shooting at the insects to protect it.

When the game begins the graphics are invariably off centre. You can move them back with the cursor controls – but take care not to move them too far.

There are more than enough hazards in this game to keep you on your toes. The insects release acid drops which can erode the ground over your burrow. If they hit you, you are killed. On the other hand, this does provide extra holes to fire through. As gopher, you are allowed to come out of the burrow. But you

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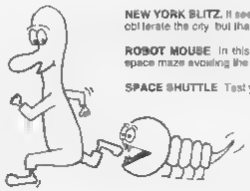
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SCREEN SCROLL

VIC 20 · ATARI 800 · DRAGON 32

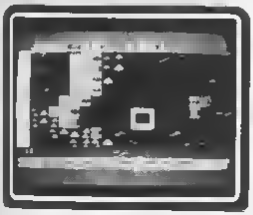
are then much more likely to be hit by the acid drops You are also in danger of being trapped above ground by the occasional mole which may close up the entrance to the burrow

The game ends when all three lives are gone or when the insects succeed in eroding the base of the cactus so that it falls

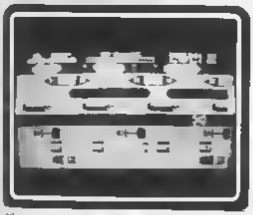
You control the game with a joy stick or with easy-to use keys Note that the L key, which is used to fire does not repeat if held down

Kaktus is sufficiently interesting to interest players who have become bored with variations on the alien attack theme The graphics are simple but effective, and the mole provides enough of a 'wild' element to add to the general interest **Karl Dallas**

GAME: PREPPIE
SUPPLIER: ARVENTRRE INTERNATIRNAL
MACRINE: ATARI 800
PEICE: £21.99



GAME: FROGGER
EUPPLIER: RN-LINE INC
PRICE: £22.75
MACHINE: ATARI E00



These two are essentially the same game both being glossy versions of the arcade favourite Frogger as you might guess by the name, is the original copyright version, while Preppie is an amusing variation

For any of you who have yet to sample its delights, Frogger involves manoeuvring a frog first across a busy road and then across a river to reach a home base at the top of the screen There are four lanes of traffic on the road, two lanes in each direction, and the speed of this increases as the game progresses The frog must avoid touching any of the vehicles On the river the opposite applies since the frog must leap onto moving streams of logs turtles and crocodiles to get across Believe it or not the frog drowns if it falls in the water

Things are made more difficult by deadly snakes which wander across the grass between the river and the road, and by various creatures which lie in wait at your home base ready to gobble you up

The version of Frogger for the Atari is fairly true to its ancestry except that it is only a one-player game and each game consists of five frogs There are lady frogs which wait on logs for your controlee (which is presumably a gentleman frog) to escort them home Leaping on top of this frog of the fairer sex allows you to control the happy pair as if they were a single creature The game has two speeds

Preppie has a similar layout but with only three lanes of traffic on the road and on the river In fact, the road is a fairway and is populated with lawn mowers golf cars and bulldozers The river starts off with boats only on it but logs and crocodiles appear later on Instead of a frog you control a young student – 'preppie' is a US term for rich spoilt kids who have attended public school The preppie's name is given in the story which accompanies the game as Wadsworth Overcash

Because of a bizarre college tradition, Wadsworth has to retrieve golf balls on a very dangerous course In the first frame there is only one golf ball It lies on the other side of the green, and must be retrieved and carried back to the starting zone As the game progresses more balls appear Only one ball can be carried at a time and there is a time limit Incidentally instead of a snake threatening you in the central reservation there is a giant frog!

Preppie can be played by one or two players using either one or a pair of joysticks In both Preppie and Frogger the graphics are superb, and they both include melodic but repetitive tunes The music can be turned off without losing the other sound effects by pressing SELECT on Frogger or SHIFT and M on Preppie

I like both of these games, and to be honest there is not much to choose between them Preppie wins out in terms of presentation, but the long sequences between each term make it slower It also includes the option of starting at any level between one and nine which can be useful once you start to master the game **DO**

GAME: THE KING (RRIGINALLY SRLR AS DONKEY KRNG)
SRPPLIER: MICRODEAL
PRICE: £E
MACHINE: RRAGON 32

This is a version of the curiously named arcade game Donkey Kong The scenario is an old warehouse where a huge gorilla (clearly a relative of King Kong) is holding a young woman prisoner Each of the four frames has a different configuration of horizontal girders linked by ladders with the belligerent ape and his terrified captive at the top

To start with your job is simply to climb from the bottom of the screen to the top and rescue the girl This is complicated by the endless supply of barrels which are consistently hurled at you by the gorilla

You use the joystick to control a little character who leaps when you press the fire button Apart from jumping over the barrels your only defence is to smash them with a mallet, of which two are available at different levels of the screen

These mallets will destroy the fire balls which wander about the place But possession of them is temporary and you cannot climb any ladders while holding one

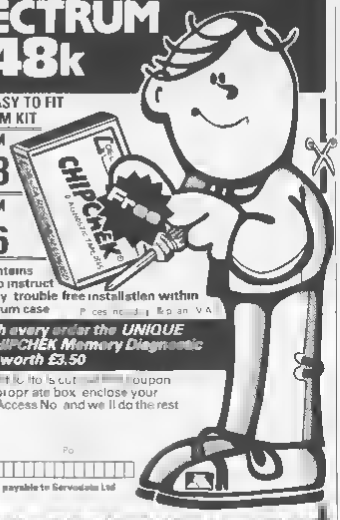
If you reach the top on the first frame the scene changes Now you run over eight plugs symmetrically positioned in the structure These then disappear – causing the girders to collapse and the gorilla to fall to the floor This time there are no barrels but plenty of fireballs

As the game goes on, all sorts of further hazards appear These include conveyor belts furnaces and lifts each demanding a different strategy

I have always felt this game was one of the most interesting and challenging around and this version is one of the best you'll find on a micro It offers two different playing speeds, for one or two players with the option of a 'practice' game in which you get 12 men instead of three Full instructions are available at the beginning.

Three copies of The King are included on the tape, giving three colour schemes The third is in the highest resolution graphics It is thus less colourful than the other two, but was my favourite, with crisp detailed graphics almost up to the standard of its arcade peer If I had to recommend one arcade type game to a Dragon owner, this is the one I'd choose **DO**

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SCREEN SCROLL

DRAGON 32 · ATARI · IBM PC

GAME: KATERPILLAR ATTACK
SUPPLIER: MICRODEAL
PRICE: £8
MACHINE: DRAGON 32
(VERSION ALSO AVAILABLE FOR ATARI)

No prizes for guessing that this is the Dragon version of Centipede the copyright of which is one of those held by Atari UK. It is licensed from an American outfit called Tom Mix Software.

You move a small oval base around the bottom of the screen while firing upwards at long centipedes/caterpillars, each of whose segments has a life of its own. The playing field is scattered with mushrooms which take four shots to destroy. New mushrooms appear whenever you hit a caterpillar segment. They also appear in the wake of the creatures (fleas in the original but described as spiders in the introduction to Kater pillar) that occasionally hurtle down at you from the top of the screen.

Katerpillar is fast with good graphics and sound. It isn't as exciting as the Atari cartridge version but is less than a third of the price. My only major criticism is that the base will only move very slightly in a vertical direction so that it is virtually impossible to escape the caterpillar segments when they reach the bottom. **DO**

GAME: FLIGHT SIMULATOR
SUPPLIER: MICROSOFT
PRICE: £35.00
MACHINE: IBM PC (64K)

Far more than just a game, the Microsoft simulator is realistic enough to qualify as a serious training aid for prospective pilots or those with a passion for flying but no cash to indulge it.

You can select a vast number of routes about the North American continent. There are 22 detailed airport layouts to take off from or land at, in weather conditions ranging from daylight with no wind and not a cloud in the sky through to pitch darkness and solid clouds with a tornado raging.

This program is for the dedicated, for people who are prepared to spend many hours in the cockpit learning how to fly. Its long term appeal for them is undoubted but less serious flyers could soon admit defeat.

There is a 100-page instruction manual which is easy to read and understand. Illustrations and maps explain the aircraft controls and instruments clearly. The instrumentation, too, is excellent, with a generally rapid response to the controls. With so many variables for the pilot to set it can be tailored to fit just about any level of skill.

Unfortunately, with such a large area of the world to cover and display the resolution gives a rather jerky and lumpy appearance. The colours are not quite realistic and although the graphics are excellent, I have to fault the sound effects.

If you get tired of serious flying, a bonus in this packge is British Ace, a World War I dogfight game. In this you must shoot down at least five enemy fighters – with differing capabilities – and bomb aerodromes and factories. You battle it out in real time so it is advisable to learn to handle your aircraft using the flight simulator program before tackling this game. This is one situation where learning on the job will not do. **Nigel Cross**

ZX81

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WHAT THEY SAID ABOUT CASSETTE 4

quality as well as quality *Sinclair User* Oct 82
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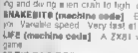
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3D TIC TAC TOE (Basic) Played on a 4 x 4 x 4 board of this is going to be a hard one for the computer to beat
GUNFIGHT (machine code) Western style shoot-out between player and against the computer
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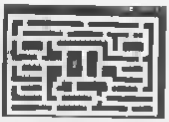
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AFTER THOUGHTS

Solution to puzzle on page 27

Base to New York/New York to Base/Base to Cairo Base to Rome/Rome to Base/Base to Cairo, Base to London/London to Base/Base to Sydney

Solution to puzzle on page 28

2C and 4D

Solution to puzzle on page 30

Title C Sequence starts in top left corner, works down the first column, up the next, down the third etc The three symbols – circle, square and triangle – are repeated in white and black Each appears once, then twice, then thrice, etc

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